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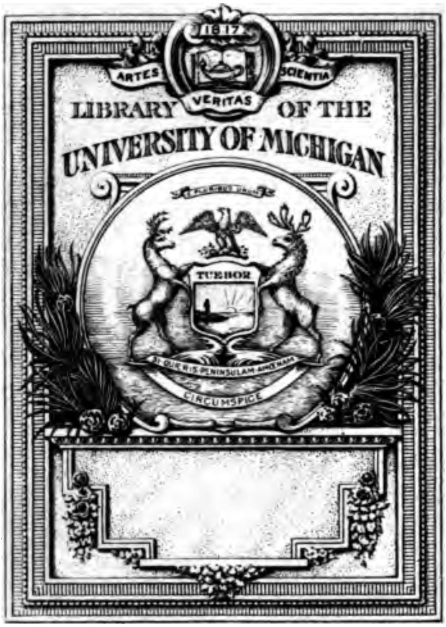
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GREGOR VON FEINAIGLE.

THE NEW

Art of Memory,

FOUNDED UPON THE PRINCIPLES

TAUGHT BY

M. GREGOR VON FEINAIGLE:

AND APPLIED TO

Chronology, History, Geography, Languages, Systematic
Tables, Poetry, Prose, and Arithmetic.

TO WHICH IS ADDED,

SOME ACCOUNT OF THE PRINCIPAL SYSTEMS

OF

ARTIFICIAL MEMORY,

FROM THE EARLIEST PERIOD TO THE PRESENT TIME;

WITH

INSTANCES OF THE EXTRAORDINARY POWERS

OF

NATURAL MEMORY.

Illustrated by Engravings.

Third Edition,

CORRECTED AND ENLARGED.

Constat memoriam habere quiddam artificii et non omnem à natura proficisci. — *Cic.*

London:
Printed by R. Edwards, Crane Court, Fleet Street,
FOR THE PROPRIETOR;
AND SOLD BY SHERWOOD, NEELY, AND JONES,
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1813.

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PREFACE

TO THE

FIRST EDITION.

As the art which forms the subject of this volume is sufficiently discoursed on, in the introductory matter prefixed to the system contained in the present work, it remains only to give an account of the origin of this publication.

The system, here presented to the public, is that taught by M. Von Feinaigle; who, by the public exhibitions which he has given of the proficiency of some of his pupils, has excited a very general interest and curiosity as to the mnemonic art. The following pages contain, amidst various other matter, the substance of fifteen of the Professor's lectures, on the application of the art to *Chronology*, *Geography*, *History*, *Language*, *Systematic Tables*, and *Poetry* and *Prose*; being the whole of one course, with the exception of one lecture on *Arithmetic* and *Algebra*. This was omitted because the subject to which it relates, is so complicated in itself, as to render it

In order to render this work as complete as possible, an account has been inserted of the *Principal Systems of Artificial Memory:* and, accordingly, the public and private repositories of curious literature have been diligently searched for scarce books on this subject.

Some instances of the extraordinary powers of *Natural Memory* conclude the volume; they have been inserted from a persuasion that they will be new to many persons, and agreeable to all. In short, nothing has been omitted, which was thought capable of illustrating or giving interest to the subject; and it is hoped, nothing has been inserted, which the curious reader would wish to be suppressed.

Under these circumstances, the Editor takes leave of his readers, in full confidence, that whatever may be the success of his publication, he has at least deserved well of them, in his intentions and endeavours to promote their advancement in useful knowledge.

LONDON,
August, 1812.

ADVERTISEMENT

TO THE

SECOND EDITION.

If the sale of a book be any criterion of its merit, the present work must stand high in the opinion of the public, as a large impression has been disposed of, in the short space of *four months.* The general utility, indeed, of this 'New Art of Memory,' needed only to be known to be properly estimated and successfully practised.

The appearance of such a system as this, has produced (as might naturally be expected) many imitators. The merit of having *improved* upon the original plan of M. FEINAIGLE, does not, however, appear to belong to any of these persons; for the editor is enabled to state, without fear of refutation, that either an attendance upon M. Feinaigle's lectures, or indeed the former edition of this book, has furnished more than the outlines of those systems which were so recently taught in the metropolis. The diagrams, indeed, distributed to the pupils who attended these lectures were, evidently, copied from those of M. Feinaigle. The hieroglyphics, it is true, were changed, but the principles and the practice of the art were precisely the same.

The chief peculiarities which distinguish this edition from that which preceded it, are the following:—

1. The editor has adopted a more convenient and connected disposition of his materials, and has given an *introduction* to mnemonics partly new, together with several additions and illustrations calculated to extend the knowledge of this art, and to accelerate the progress of the student. Among the additions may be named the application of the art to *Arithmetic*, which was not inserted in the former edition, for the reasons there stated.

2. Some new and interesting *notices of books* have been inserted in the account of the Principal Systems of Artificial Memory. This sketch contains notices of more than SEVENTY* works on the subject, including copious extracts from many books of great curiosity and value. A small portion of extraneous matter has also been omitted, and the whole of *Lowe's Mnemonics* has been introduced. This change was made for two reasons; (1.) on account of the extreme scarcity of Lowe's *original tract*, and (2.) because some persons, perhaps, may be inclined to practise this system, and yet be unwilling to purchase the last edition of Grey for this purpose.

3. To the account of instances of the extraordinary powers of *natural memory*, is appended an interesting narrative of *Zerah Colburn*, the young American who is so well known for his wonderful powers in extemporary calculation. This extraordinary youth seems, indeed, to rival the far-famed Jedediah Buxton, in his instantaneous, but correct, solution of the most difficult arithmetical questions.

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* It is, perhaps, worthy of remark, that one of the most celebrated bibliographers of the present day, BRUNET,—in his *Manuel du Libraire*, (*Paris* 1810,) notices *one work only* on Artificial Memory, viz. that of *Grataroli* translated by *Cope*—the same solitary book inserted by DE BURE, in his *Bibliographie Instructive*.

4. There is prefixed to the present edition, a *Portrait* of M. Von Feinaigle, the accuracy of which may be relied on.

Having stated the chief advantages of this edition, the editor will proceed to offer some observations upon the importance and general utility of the present New Art of Memory. And, here, he cannot refrain from strongly recommending it to the especial notice of all *Tutors* and *Instructors of Youth.* The revival of the antient mnemonics seems to have formed a new æra in the annals of education:—it must, therefore, deeply interest every one who is concerned in so important an office. Let the system be impartially *examined* and properly *practised,* and there will be no need of a herald to proclaim its merits.

The *general utility* of the present work, must be obvious to every one; but the peculiar advantages which it offers to the *Senator,* the *Divine,* the *Barrister,* the *Merchant,* and the *Man of Business,* are evident, even from a casual examination of the system. In short, what was said of Schenckel's method is equally applicable to the present. Speaking of the importance of his mnemonics to the legal man, he says, ‘ The *Attorney* who has many causes to conduct, may, by the assistance of this art, imprint them so strongly upon his memory, that he will have an answer ready for his clients, at any hour, with as much precision, as if he had just perused the whole of the papers relative to each cause. In pleading, the *Barrister* will not only have the evidence and reasoning of his own party at his fingers' ends, but all the grounds and refutation of his antagonist.’

Were the editor to enlarge upon the general usefulness of the ‘ New Art of Memory,’ it would be necessary to name every profession and employment in life; for he is persuaded that there is not one of these, in which some benefit may not be derived from a careful and diligent practice of the principles here developed.

The purposes to which this system is applicable in the every-day *occurrences of common life*, it would be endless and useless to specify; the editor will, therefore, conclude in the words of *Grataroli*, an eminent writer on mnemonics:—

'It sufficeth therefore, that we have expressed a methode or compendious waye, the whiche whosoever foloweth shall easelye (so that exercise be not lackynge) get and attayne the certeine and sure remembraunce, of manye and sundry things, as due occasion shall require: but as for the sluggish and ydle, let them slugge and sleepe stille, to whome all thinges are displeasing.'

LONDON,
January, 1813.

ADVERTISEMENT

TO THE

THIRD EDITION.

In presenting this third and improved edition of the 'New Art of Memory' to the public, it will be sufficient to observe, that the whole work has been carefully revised; and that several useful tables have been added, in order to facilitate the progress of the mnemonic student.

The system of M. Feinaigle has been sanctioned by some of the most eminent names in society, and is well characterized by the Rev. Peter Baines, a Professor in the College of Ampleforth in Yorkshire.* "I think (says Mr. Baines) Mr. Feinaigle's system excellent, and in most cases, incapable of improvement. Many things, which, before could scarcely at all, and not without the greatest difficulty be acquired, he has rendered by his discoveries perfectly easy and accessible to the lowest capacities; and, in every branch of study, whether easy or difficult, he has considerably abridged the time of learning them, while at the same time, the labour of the student is rendered more pleasant, and his acquirements both more perfect and lasting. The system is not only adapted to the higher studies, but is applicable to the very first elements of learning, and is of no less use to the child than to the scholar. Sufficient of it has been experienced here to convince all the profession, that it is infinitely superior to any former mode of instruction, and that its advantages are very great indeed."

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* At this school, M. Feinaigle's Mnemonics have been regularly taught, and with great success.

The truth of these observations seems now pretty generally acknowledged; and the time is not far distant when ample justice will be done to the merits of this useful system of memory. It is highly gratifying to hear that a Society of Gentlemen, in Dublin, have formed an establishment for the education of youth on the system of M. Feinaigle. They have taken two contiguous houses near Mountjoy-square, and they announce in their prospectus "that the emoluments arising from the Institution (save one half to the Professor for his life) are to form a fund for the promotion and extension of the object of education upon this plan; that with them there can be no consideration of profit, inasmuch as by the Deed of Trust, they can merely enjoy legal interest for the money advanced, and, that in founding a seminary under such circumstances, they have been solely influenced by a conviction, derived from personal observation, and the experience already had in the College of Ampleforth."

The Committee announced, that they would, on the first Monday in September, under the auspices of Professor Von Feinaigle, and well-qualified Assistants, instructed by him, commence the education of youth, on a plan, of which the following is an outline:

Supposing the youth capable of reading and writing, and of an age not under nine years, the Pro fessor undertakes, and the Committee do not hesitate in joining in the pledge, that in four years they shall acquire a competent and radical knowledge of the following subjects:—

1st. Of the English, Latin, Greek, French, Italian, and Spanish languages, so as to speak several, and write in all, correctly.

2ndly. Of *History* and *Chronology*, so perfect a knowledge as to connect with every important fact, antient and modern, its specific date and relation to corresponding and contemporaneous events.

3dly. Of the *Mathematics*, comprising Arithmetic and Algebra, and certain departments of Natural Philosophy.

4thly. Of *Geography*, embracing general views of the system of the world, and minute information respecting every country on the habitable globe.

5thly. Of *Natural History*, an acquaintance with the arrangement of plants, animals, and minerals, and their general application to the wants of civilized society.

Besides the above, there are other objects of instruction necessary to render the plan of school education complete, too numerous here to detail; suffice it to say, that youth so educated, will be qualified, if designed for the University, to pass through it with eclat: or if a degree be not required for his professional pursuits, to appear in society with the information of a gentleman.

For information thus extensive, and acquired within a period of time so limited, the Proprietors have fixed on the lowest terms possible, consistent with the prosperity of the Institution.

As the mode of instruction is by Lecture, the same teacher can instruct 500 boys with as much ease and certainty as five.

A public examination will be held at the seminary before Christmas next, to manifest to the public the progress made by the pupils, after which, such examination will be held quarterly.

The Managing Committee will breakfast once a week at the Institution, and one of its Members daily visit it.

LONDON,
September, 1813.

CONTENTS.

I. NEW ART OF MEMORY.

INTRODUCTION .... Page 1
CHAP. I. PRINCIPLES 31
II. CHRONOLOGY 55
III. GEOGRAPHY 68
Sect. 1. Principles 68
2. General Geography 73
3. Particular Geography 81
4. Statistics 86
IV. HISTORY 93
V. LANGUAGE 104
Sect. 1. On learning Languages 104
2. Sketch of the origin of Language.. 107
3. Account of some attempts towards a universal character or alphabet 114
4. Proposed philosophical arrangement of the alphabet as applied to languages in general 127
5. The derivation of French from Latin, shown to consist, principally, in the change of certain letters according to established rules... 138
6. Mode of learning the conjugations and declensions of a language, exemplified in the Latin 151
7. Particular directions for the acquisition of a language. 156

CHAP. VI. SYSTEMATIC TABLES .... Page 158
VII. POETRY AND PROSE 171
VIII. ARITHMETIC 182

II. PRINCIPAL SYSTEMS OF ARTIFICIAL MEMORY, CHRONOLOGICALLY ARRANGED.

Thomas Bradwardin 191
Matheolus Perusinus 192
Jacobus Publicius .... ib.
John Priis 195
Baldwin of Savoy 196
Peter of Ravenna .... ib.
Jacobus Colinæus 197
Nicholas Chappusius .... ib.
John Romberch 198
Lodovico Dolci 199
William Grataroli 200
William Fulwod .... ib.
Stephen Cope 217
John Spangenberg 219
Cosmus Rosselius .... ib.
Jordano Bruno 219, 222
Thomas Watson 222
John Michael Albert .... ib.
Philip Gesvaldi .... ib.
John Baptist Porta 223
F. H. Marafioti 224
Lambert Schenckel 225
Anon. .... ib.
Joh. Paep. Galbaicus .... ib.
Arnold Backhusy 226
Martin Sommer 227
Sempronius Lancioni 238
John Henry Alsted .... ib.

Adam Brux .... Page 238
Fr. Mart. Ravellin 245
Robert Fludd 247
Apsines (Græc. Rhet.) 248
Adam Naulius .... ib.
John Willis 249
Anon. 292
Joann. Velasquez .... ib.
Hugo Carbonnell 293
Raymund Lully 293, 294
Andrew Valieri 293
Adrian le Cuirot .... ib.
Joh. Conrade Dannhawer 294
Meyssonerus .... ib.
Henry Herdson 297
John Belot 318
Anon. .... ib.
Athanasius Kircher .... ib.
Johannes Austriacus 319
John Shaw 320
Simon Wastell .... ib.
Anon. 339
Jo. Brancaccio 340
Marius D'Assigny 341
Thomas Erhardt 349
Claude de Buffier .... ib.
Richard Grey 351
Solomon Lowe 374
Dan. Geo. Morhof 415
Fr. B. J. Feyjoo 416
Anacardina, Aguilera, Epiphanius de Moirans, Conti, Megiserus A. Ferreya de Vera 417

III. INSTANCES OF THE EXTRAORDINARY POWERS OF NATURAL MEMORY.

Hortensius .... Page 418
Seneca 419
Avicenna .... ib.
Joseph Scaliger 420
Bishop Jewell .... ib.
Lipsius 421
Muret 422
Famianus Strada 423
Thomas Fuller 424
Humphry Burton 425
Dr. Wallis 426
Antonio Magliabechi 427
William Lyon 430
Jedediah Buxton 431
Richard Porson 458
Dr. Leyden 452
Zerah Colburn 453

Directions respecting the Plates.

PORTRAIT to face the Title.
PLATE I. .... p. 38
II. 53
III. 54
IV. 74
V. 75

⁂ *Before the reader uses Plates* II. III. IV. *and* V. *it will be advisable to take them out of the volume and paste them on stiff paper. If the white paper be cut away, it will fold up, so as accurately to represent the floor, four walls, and cieling of a room.*

" IN this work, we conceive, there is a just development of the principles of M. Feinaigle; and the author has, with great industry of research, detailed the principal systems of artificial memory, both before and after that of Mr. Grey was announced to the public." *Rees' Cyclopedia*, vol. xxiii. part 2, art. *Mnemonica.*

" This system is adapted to the meanest capacity. Besides being infinitely serviceable in the more important subjects, to which other systems have been usually confined, it can with equal facility be used, in the common transactions of ordinary life; and its application is rather a source of amusement than labour. It possesses all the advantages of the preceding methods, and as a whole is superior to any that have yet appeared." *Monthly Review for May*, 1813.

" The principles of the art may be considered as fairly developed in this work; the book is in itself very curious and interesting, and well worth purchasing." *British Critic for August*, 1813.

Something herein I once redrest,
And now again for thy behoof,
Of zeal I doe and at request,
Bothe mende and adde, fit for all proof.

Of mem'ry's *use, the endless might,*
No wit nor language can expresse:
Apply and try both day and night,
And then this truth thou wilt confesse. J. Dee.

THE NEW

Art of Memory.

Introduction.

MEMORY, in the sense in which it is to be understood in the present work, (for it is not employed always in the same precise sense) cannot, perhaps, be better defined than in the words of Mr. DUGALD STEWART, "It is that faculty which enables us to treasure up, and preserve for future use, the knowledge we acquire; a faculty (he adds) which is obviously the great foundation of all intellectual improvement, and without which, no advantage could be derived from the most enlarged experience."

With the various metaphysical theories concerning Memory which have been advanced by different philosophers, we shall not pretend to meddle; as such an investigation would not much assist our present purposes. Whatever may be the relation in which Memory stands to the other principles of our constitution, it is beyond all controversy, a most necessary and excellent faculty: so much so, that, as DR. WATTS observes, "all other abilities of the mind borrow from hence their beauty and perfection; for other capacities of the soul are almost useless without this. To what purpose (as the same eminent author inquires) are all our labours in knowledge and wisdom, if we want Memory to preserve and use what we have acquired? What signify all other intellectual or spiritual improvements, if they are lost as soon as they are obtained? It is Memory alone that enriches the mind, by preserving what our labour and industry daily collect. In a word, there can be neither knowledge, nor arts, nor sciences, without memory; nor can there be any improvement of mankind in virtue or morals, or the practice of religion, without the assistance and influence of this power. Without memory, the soul of man would be but a poor, destitute, naked being, with an everlasting blank spread over it, except the fleeting ideas of the present moment."

This faculty exists, however, in very different degrees, in different men. Some persons possess astonishing vigour of memory,* while others are deplorably deficient in this faculty; or, as Mr. **Locke** has beautifully expressed the same idea, "in some persons, the mind retains the characters drawn on it like marble, in others like freestone, and in others, little better than sand."[*] Themistocles, the Athenian, indeed, is said[†] to have been oppressed by the strength and tenacity of his memory, and to have wished for the possession of the faculty of oblivion, rather than an increase of the powers of remembrance; but it is more than probable that, in this respect, if the anecdote be true, he stands an exception from all the rest of mankind. *Plenui rimarum sum*, may be truly, and without reproach, said by almost every man, with regard to his memory: and that not only concerning matters difficult to be retained, but even concerning the most ordinary occurrences of life.

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* For many remarkable instances of the extraordinary powers of natural memory, the reader is referred to the conclusion of this volume.

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[*] Mr. Locke, speaking of the continual decay of our ideas, says, "The ideas, as well as children, of our youth, often die before us: and our minds represent those tombs, to which we are approaching; where though the brass and marble remain, yet the inscriptions are effaced by time, and the imagery moulders away. The pictures drawn in our minds are laid in fading colours, and if not sometimes refreshed, vanish and disappear. How much the constitution of our bodies, and the make of our animal spirits are concerned in this, and whether the temper of the brain makes this difference, that *in some it retains the characters drawn on it like marble, in others like freestone, and in others, little better than sand;* I shall not here inquire: though it may seem probable, that the constitution of the body does sometimes influence the memory; since we oftentimes find a disease quite strip the mind of all its ideas, and the flames of a fever in a few days calcine all those images to dust and confusion, which seemed to be as lasting as if graved in marble." *Works,* vol. i. p. 76. ed. 4to. 1777.

[†] Plutarch Apophth.

To remedy this inconvenience, and provide as effectually as possible against the mischiefs of forgetfulness, various artifices have, at different times, been resorted to. Of these, the *topical memory* of the ancients stands first, both in point of date and of celebrity; and as its principles are very analogous to those of the present system, we shall give some account of the origin and general plan of that invention. And, as PROFESSOR BARRON, has already trodden this path, no apology will be offered to the reader for presenting to him, that author's very excellent account of the subject, prefaced by some of the ingenious remarks with which he has introduced it.

"The recollection* which ordinary memories possess, appears to be resolvable into two principal sources, the vivacity of the impression and association.*****

---

* Barron's Lect. on Belles Lettres and Logic, v. 1. p. 609.

"But the principal expedient for assisting the memory is derived from association. For instance, when I see a house, I naturally recollect the inhabitants, their manner of life, and the intercourse I have had with them. The sight of a book prompts the memory of its contents, and the pleasure, or profit, I have received from the perusal of it. A view of the sea may suggest the idea of a storm, and the painful recollection of the loss of property, or of the life of a friend, by shipwreck. The act, then, of aiding recollection by association, is to connect thoughts remote, or abstract, with others more obvious and familiar, that the recurrence of the latter may bring along with it the memory of the former. Thus the sight of my ring, which I cannot miss to observe, reminds me of the action, to suggest the remembrance of which I moved it from one finger to another. The ringing of the bell, or the sounding of the clock, prompts the recollection of the business I had resolved to perform at these times. A glimpse at the first words of a paragraph, or a page, introduces the recollection of the whole. In a word, we must connect the things we wish to remember with the immediate objects of our senses, that offer themselves daily to our attention, but particularly with the objects of our sight, the most vigorous and lively of all our senses, and of which the objects are, perhaps, more numerous than those of all our other senses put together.

"This theory is the foundation of all contrivances which have been, or, perhaps, can be, employed to help recollection. It is the groundwork of the famous artificial memory of SIMONIDES, a lyric poet, of the island of Ceos, one of the Cyclades, who flourished in the sixty-first olympiad, about five hundred and thirty-five years before the birth of Christ, and [who] is celebrated by CICERO and QUINCTILIAN. Both these authors relate the following mythological incident, on the occasion which suggested the invention. Simonides was employed by Scopas, a rich Thessalian, to compose a panegyric on him for a certain sum of money; was invited to a festival given by Scopas to his friends, in order to rehearse it, but was sordidly refused more than half the stipulated compensation,—because puzzled, perhaps, with the sterility of the principal subject, he had introduced a long episode, amounting to half the poem, in praise of Castor and Pollux. Simonides soon found an avenger of the insult. He was immediately summoned from the company by two young men on horseback, supposed to be Castor and Pollux in disguise, who appeared to protect their favourite poet; and who, as soon as they had saved Simonides, made the roof fall on Scopas and his company, bruising them so to death that not a lineament of them could be known. Simonides, by recollecting the manner in which they sat at table, was enabled to distinguish them, and to deliver them to their friends for burial. The aid which the recollection of the poet received, on this occasion, is said to have suggested the idea of an artificial memory.

" The principle of the scheme of Simonides, is to transfer a train of ideas, the archetypes of which are not the objects of sense, and are, therefore of difficult recollection, to another train which we cannot miss to recollect, because the archetypes are not only objects of sense, but objects of sight, with which archetypes we are perfectly familiar; or which may be placed actually before our eyes. Suppose then Simonides were to commit to memory a discourse, consisting of speculations concerning government, finances, naval affairs, or wisdom, none of the archetypes of which could be made objects of sense, at least, at the time of delivery; and to assist his recollection, he were to connect the series of ideas in that discourse, with a series of objects, which he could either place in sight, or with which he was so familiar, that he could not fail to recollect them; he would proceed in the following manner. He would take a house, for instance, either the one in which he might deliver the discourse, or another; with every part of which he was perfectly acquainted. He would begin at some fixed point of that house, suppose the right side of the door, and he would proceed round it in a circular line, till he arrived at the point from which he set out. He would divide the circumference of the house into as many parts as there were different topics, or paragraphs, in the discourse. He would distinguish each paragraph by some symbol of the subject it contained; that on government, by the symbol of the crown, or a sceptre; that on finances, by the symbol of some current coin; that on naval affairs, by the figure of a ship; that on wisdom, by the figure of the goddess who presided over it. He would either actually transfer, or suppose transferred, these symbols to the different compartments of the house, and then all he had to do, in order to recollect the subject of any paragraph, was, either to cast his eye on the symbol during delivery, or to remember upon what division the symbol was placed. The memory, by this contrivance, easily recalled the discourse. The orator either saw, or could not fail to remember the compartments, because he was perfectly familiar with them. Neither could he forget the symbols of each paragraph, because they were no more than hieroglyphical paintings of the sense.

" In the place of a house, we may assume, according to *Quinctilian*, a public building, the walls of a city, a well known road, or a picture, to divisions of which we may refer our symbols. *Metrodorus* assumed the circle of the zodiac, which he divided into 360 compartments, equal to the number of degrees of which it consists, making a compartment of each degree.

"Some people carried this art so far as to comprehend the words of a discourse, by constructing symbols for each of them, and referring in like manner, these symbols to compartments. This seems to have constituted nearly what we call short-hand writing, except that our short-hand writers oblige themselves to commit to memory the meaning of their symbols, and pretend not to refer these to any more familiar objects. Quinctilian accordingly observes, that this pretended improvement terminated in confusion, and embarrassed, much more than it assisted recollection. However much, therefore, he might prize the scheme of Simonides, he rejected this supplement as nugatory, or detrimental."

This system of Mnemonics was a favourite pursuit with the Greeks;—and was cultivated with success by the Romans, among whom Crassus, Julius Cæsar, and Seneca, are said to have particularly excelled in this art.

Such were the origin and principles of the celebrated *topical memory* of the ancients: from which source are derived all the various modern systems of local and symbolical memory, that have been promulgated from the thirteenth to the eighteenth century. We shall here briefly recapitulate the names of the *principal writers* on the subject, referring our readers to another part of this volume for an account of the different systems.

That luminary of science, *Raymond Lully*, born in 1236, seems to have been the first modern who brought the art of memory into notice, after it had lain dormant for so many ages. This art was termed *transcendental*, and distinguished by his name.

In the *fifteenth* century mnemonics seem to have occupied the attention of *Publicius*, *Priis*, *Peter of Cologne*, and *Peter of Ravenna*, who successively published systems of local and symbolical memory.

In the year 1533, *Romberch* published his *Congestorium Artificiosæ Memoriæ*, which contains a very complete view of his predecessors' labours, with many important additions. *Grataroli*, an Italian physician, was the next writer on this subject, who in 1555, put forth a treatise, '*de memoria reparanda, etc.*' This was translated into English by William Fulwod, under the title of 'the Castel of Memorie;' and afterwards rendered into French by Stephen Cope. The treatise of Grataroli contains much curious matter.

The works of *Spangenberg*, *Rosselius*, *Bruno*, *Albert*, *Porta*, *Marafioti*, and others, appeared about the close of the *sixteenth century*, but they contained nothing very materially new on the mnemonic art.

The *seventeenth* century was remarkable for the number and variety of mnemonistic works which issued from the presses of the continent. England also had her share in this honour, and produced one or two books worthy of examination. The system of *Schenckel* occupied the greatest share of attention in France and Germany. Schenckel was followed by *Alsted*, *Brux*, *Ravellin*, and *Naulius*. Brux also wrote an essay upon the 'art of forgetfulness,' and gave numerous rules for acquiring perfection in this useful science.

The principal work published in *England*, on the subject of the local memory, appeared in 1618, under the title of *Mnemonica; sive ars Reminiscendi, etc.* by John Willis; and was translated in 1661, by one Sowersby, a bookseller. This curious and rare volume is replete with information respecting mnemonics, and discourses at large concerning every particular which requires the attention of the student.

In the year 1651, *Henry Herdson*, who styles himself a Professor by Public Authority in the University of Cambridge, published his *Ars Mnemonica, sive Herdsonus Bruxiatus, etc.* in

Latin and English. It is merely a republication of part of Brux's *Simonides Redivivus.*

The mnemonical essays published on the continent from 1620 to 1702, were principally by *Azevedo, Carbonel, Cuirot, Dannhawer, Belot,* and *Brancaccio*:—several anonymous systems were put forth also during this period. *Erhardt's Ars Memoriæ* appeared in 1715, and *Morhof* and *Father Feyjoo*, have, both, dissertations expressly upon the subject; the one in his *Polyhistor*, and the other in his *Cartas Eruditas y Curiosas.*

From the time of Feyjoo (1781) to 1806, (if we except a German translation of Schenckel by Klüber) the local and symbolical memory seems to have lain completely dormant. In the *Philosophical Magazine* for December, 1806, there is the following notice:—

"A new branch of science is begun to be studied in Germany. It is the science called by the antients *mnemonica*, or the art of memory. We find in Herodotus, that it was carefully taught and practised in Egypt, whence it was transplanted into Greece. This historian attributes the invention of it to Simonides; but this opinion is refuted in a dissertation published by M. Mongenstern, of Dorpat, upon *mnemonica.* He there asserts, that this science is more intimately connected with the Egyptian hieroglyphics than is generally thought, and that this connection may help to explain them. However the case may be, this singular art, so long neglected, has reappeared in Germany with some eclat. M. Aretin, who may be accounted the restorer of it, has recently had M. Kæstner, a clergyman, as his pupil, whom he has permitted to teach his new doctrine at Leipzic; at the same time exacting a promise from him not to suffer his pupils to write down his lectures. M. Kæstner travels about like Dr. Gall.

"According to a book written, it is said, by a child of twelve years of age, and mentioned in the Leipzic catalogue for the last September fair, *mnemonica* is a true science, and may be taught by means of seventeen different rules, and which will give a memory to individuals of every age."

In March 1807, M. GREGOR VON FEINAIGLE, a native of Baden, visited Paris, and delivered Lectures on his 'New System of Mnemonics and Methodics.' In the *Philosophical Magazine* for June, 1807,* there is the following extract from a letter written by M. FICHTEL, at Paris, to a friend in London, giving some account of M. VON FEINAIGLE's exhibitions there.

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* Vol. xxviii. p. 92.

" Paris, 2d March, 1807.

" During my residence in this metropolis, I heard a great deal of a new method of *mnemonique,* or of a method to assist and fix our memory, invented by Gregor de Feinaigle. Notwithstanding the simplicity with which he announced his lectures in the papers, I could not determine myself to become a pupil of his, as I thought to find a quack or mountebank, and to be laughed at by my friends for having thrown away my cash in such a foolish manner. Perhaps I should hesitate to this moment about the utility of this new invented method to assist our natural memory, had I not had the pleasure of dining at his excellency's the Count of Metternich, the Austrian ambassador, who followed, with all his secretaries, the whole course of lectures: they all spoke very advantageously of it, likewise several other persons of the first rank I met there: in consequence of this I was inserted into the list of pupils, and I follow, at this moment, the lectures. All I can tell you about this method is: it is a very simple one, and easy to be learned, adapted to all ages and sexes: all difficulties in such sciences as require an extraordinary good memory, for instance, the names and epochs in history are at once overcome and obviated. There is not one branch of science to which this method cannot be applied. It is easy to be perceived that such an invention cannot pass without some critique, and even sarcasms, in the public prints: some of them were very injurious, and plausible enough to mislead the public, who, knowing nothing of the method, are always more ready to condemn than to assist. Mr. Feinaigle, to answer all these critics at once, adopted a method not less public for Paris than the public papers, but less public for the rest of Europe: he gave, the 22d of last month, a public exhibition to about 2000 spectators, in which he did not appear at all, only about 12 or 15 of his pupils: each of them made such an application of the method as his situation in life required. The principal parts were the following: history about names and years; geography, with respect to longitude, latitude, number of inhabitants, square miles, &c. &c.; grammar in various languages, about different editions of the same work; pandects, their division, and title of each book, title, &c.; different systems of botany, poetry, arithmetic, &c. &c. At last one desired the company to give him one thousand words, without any connection whatsoever, and without numeric order; for instance, the word *astronomer*, for No. 62; *wood*, for No. 188; *lovely*, for No. 370; *dynasty*, for No. 23; *David*, for No. 90, &c. &c. till all the numbers were filled; and he repeated the whole (notwithstanding he heard these words, without order, and but once,) in the numerical order; or he told you what word was given against any one number, or what number any one word bore. It is still more striking, but certainly, likewise, more difficult, to retain as many numbers however great they may be. For words and numbers I could venture myself, with the greatest safety, as far as one hundred of each; and I am sure, after having fixed them once, which is done in less than ten minutes, I could repeat them to you at any period, without ever thinking any more of them.

" M. Feinaigle is about to visit England."

To the testimony of M. Fichtel may be added that of the celebrated French astronomer, M. Lalande, who says, " I have witnessed the extraordinary effects produced on the memory, by the method of M. de Feinaigle: one of his pupils is able to repeat, in any order, without the least mistake, a table of fifty cities in all parts of the world, with the degrees of longitude and latitude in which they are situated; the same is the case with chronology: in the *Annuaire*, I have inserted 240 dates from antient and modern history, and M. de Feinaigle's Scholars repeat them all—an astonishing aid in the study of geography and history!"

In the *Monthly Magazine* for September, 1807,* there is a letter under the signature of *Common Sense,* which, though somewhat illiberal in its remarks, displays considerable knowledge of the *principles* of the 'local and symbolical Memory.'

"Any person (says this writer) who wishes to try an experiment on the power of association, need only make use of the succession of rooms, closets, stair-cases, landing-places, and other remarkable spots or divisions, of his own house, with all the parts of which he may be supposed to be very familiar. Let him apply any word or any idea to the several parts of the house, in any determined order of their succession, and he will find it almost impossible, in recalling the same order of the parts of the house, not to associate the idea or word which he had previously annexed to each part. Thus, for example, a person may learn the succession of the Kings of England in ten minutes, by annexing the names of each succeeding monarch to the successive rooms, closets, and principal parts of his own house, beginning at the upper story, and regularly descending; or, at the lower story, and regularly ascending.

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* Vol. xxiv. p. 105.

"Any other permanent and familiar class of objects will, in general, answer the purpose better than the rooms of a house. I was myself educated in the vicinity of Oxford-street, and the streets running out of that street south and north (beginning at Charles-street, Soho-square, and so on to Park-lane, and down on the other side to Rathbone-place and Hanway-yard) are the permanent and familiar set of objects, which I make use of for my own purpose of successive association. The counties in England, the kingdoms and the countries throughout the world, the villages, and other objects on a great road, or the streets of a city, are all well suited to this business of association; and either of them may be taken indifferently by various persons, according to their acquaintance with them. The greater the variety of ideas connected with this set of objects, which may be called *the associating key*, the more easy, and the more certain is the power of recollection.

"If I do not hazard a charge of egotism; I shall mention, as illustrative facts, that by this new art I once committed to memory, in a single morning, the whole of the propositions contained in the three first books of Euclid, and with such perfection, that I could for years afterwards specify the number of the book on hearing the proposition named, and could recite the proposition on hearing the number and the book; and I have frequently, in mixed companies, repeated backwards and forwards from fifty to an hundred unconnected words, which have been but once called over to me. I may also add, to prove the simplicity of the plan, that I taught two of my own children to repeat fifty unconnected words in a first lesson, of not more than half an hour's continuance."

M. VON FEINAIGLE visited England some time in the early part of 1811. In order to exhibit a detail of his progresses in this country, we have made some extracts from the Periodical Works and Public Papers which gave an account of his various *experiments*.

" On the 22d of June, 1811, M. Von Feinaigle* gave at the *Royal Institution*, a public experiment of the efficacy of his *Method of facilitating and assisting Memory*. The Managers of the Institution, in consequence of the application of the Committee of Literature and Science, granted permission for this public display of the art, without, however, making themselves in any way responsible as to its character. The exhibition took place before an assembly of several hundred Ladies and Gentlemen, who were astonished and delighted with the result of the experiment. Four children, two boys and two girls, all under 14 years of age, had been put under Mr. Feinaigle's care but two or three days before: he had one of the girls but an hour and a half; and the longest tuition that any of them had received was but four hours and a half.—One of them repeated Goldsmith's *Hermit* backward and forward, and stated the stanza, the line, and the order of any remarkable word required of him.—One little girl answered to questions in the chronology of the Roman Emperors; and another multiplied, without slate or paper, *two* sums of *eight* figures by *eight*, and declared that she had not previously been taught arithmetic.—A boy determined the geographical situation by degrees and minutes, of 50 different cities; and on a planisphere chalked out on a board, marked down the true situation of places named to him.—Mr. Fincher, of the Institution, also recited the Mineralogical Tables of Hauy, the second part of which he had taught himself on Mr. Feinaigle's system, together with the first part of Brisson's Ornithologic System; and he declared, from his own experience, that the principles of Mr. Feinaigle's art were equally calculated to give facility in the acquisition, and certainty in the retention, of the tables of any other science—a fact which was confirmed by several Gentlemen present, who have attended the private courses of the Professor.—The examinations were carried on by Mr. Disney, Chairman of the Literary and Scientific Committee; and for a great part of the time, Mr. Feinaigle retired from the Lecture-room. Nothing could be more satisfactory than the result of the experiments; and the company returned Mr. Feinaigle their thanks.—The Professor, *Aug.* 26, repeated the experiment at *Liverpool,* where the Rev. Jonathan Brookes, at the request of the Mayor, selected from the different charity-schools of the town, children upon whom the experiment might be made. The exhibition took place before a very numerous assembly. Four children had been put under Mr. Feinaigle's tuition but three days before, two boys and two girls, and none of them had received more than two hours' instruction; neither of the girls could make or read a figure when first presented to him. The examinations (which were carried on by the Rev. Jonathan Brookes) were precisely of the same nature as those at the Royal Institution; and the results were equally satisfactory."

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* Gent. Mag. vol. lxxxi. part 1. p. 281.

"On the 6th of April, 1812, the effects of M. VON FEINAIGLE's system were exemplified at the *Surry Institution*, before a numerous assembly of Proprietors and Subscribers, by the examination of five young persons, who had previously been committed to the care of M. Von Feinaigle.*

"1. Master H. S. (13 years of age) determined the geographical situation of *fifty* principal towns in different parts of the globe, assigning to each its longitude and latitude in degrees and minutes, and named the country in which it is found. He also marked on a blank planisphere the true situation of the towns named to him.

"2. Miss P. K. (11 years of age) repeated fifty stanzas of four lines each, from the second part of Mrs. More's 'Sir Eldred of the Bower.' These she repeated consecutively, and in any order desired. On any remarkable word being mentioned, she determined the stanza, the line, and the place of the line, in which it was to be found; and also how many times the same word occurred in the Poem.

"3. Miss M. A. K (15 years of age) answered to all the declensions, as well of substantives as of adjectives, of the Latin language; and gave a full account of all the conjugations, both active and passive, without any previous knowledge of that language.

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* The whole of this report is taken from the *Morning Post* of April 18th, 1812.

"4. Miss S. S. (of the same age with the preceding pupil) answered to the declensions and conjugations of the Greek Language, and declined and conjugated several regular nouns and verbs proposed to her. This pupil had never seen a Greek character till put under the care of the Professor.

"*The whole instruction received by the above pupils consisted of five lessons only, of one hour each.*

"Master S. H. explained the physical, mathematical, and chemical characters of minerals, after Hauy's system, assigning the systematical order of any character whatever proposed to him, and showing in what manner any mineral ought to be examined and tried, to ascertain its nature. This pupil received only two hours' instruction from M. Feinaigle.

"Master S. H. afterwards requested the audience to give twenty words, or names, without any order or connection whatever. These words were written on a board, and numbered from one to twenty as follows:—

1. Tower.
2. Gate.
3. Steeple.
4. Church.
5. Chapel.
6. Institution.
7. Crotch.
8. Grey.

9. Regent.
10. Feinaigle.
11. Syracuse.
12. Wellington.
13. Graham.
14. Ten.
15. Hill.
16. Nelson.
17. Archimedes.
18. Palestine.
19. Button.
20. Reform.

" After inspecting the number and words for a space of time, not exceeding *three* minutes, the pupil named every word in the series, both forward and backwards: to any number that was proposed to him, he assigned the proper word, and *vice versa*.

" A series of twenty-eight figures, named promiscuously by the audience, was then written down, as, 8. 6. 1. 0. 5. 0. 2. 9. 6. &c. &c. &c. These the pupil surveyed attentively, for about five minutes, and then repeated them forwards and backwards. He afterwards declared how many 8's. 2's. 9's. &c. occurred in the series, and the relative situation of each figure.

" In consequence of the disappointment of many of the Proprietors and Subscribers, who could not obtain admittance into the Lecture Room on the 6th instant, the above experiments were repeated on Wednesday evening last to a crowded auditory. *On this evening* the following additional evidences of the utility and universality of M. Feinaigle's System were adduced.

"1. Master J. C. answered to two sums in *multiplication* of 8 numbers, by 8 numbers each. Each sum containing 8 separate products, besides the *total* product; he repeated any product required of him. The separate operations being represented on a board, by cyphers—on any one cypher, or line of cyphers, on either sum being effaced, he replaced them by the appropriate figures. This pupil was employed for *ten minutes* only, in committing the figures to memory.

"2. Miss S. T. answered to the *Chronology* of the Kings of England, from William the Conqueror, down to his present Majesty, in any order that was desired. She also named the predecessor and successor of any King pointed out to her. This pupil received four lessons of one hour each.

"Master S. H. after *one hour's application*, repeated a *Greek word* from Aristophanes, consisting of *seventy-six syllables* and 165 letters, both forwards and backwards; he also named any syllable in any order desired, determining its numerical situation."*

At these public experiments, M. VON FEI-

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* Similar experiments have been given at the Russell Institution, Freemasons' Hall, the London Tavern, etc. etc. etc.

NAIGLE distributed a *syllabus*, in which the nature of the pupil's examination was stated; and the six following notes, or explanations, of the objects of his 'New System of Mnemonics and Methodics,' were subjoined.

"1 *Systematic Tables.* A method that is at once speedy and effectual for acquiring the perfect knowledge of systematical tables, is an object of higher value and greater importance than at first it might appear. How often are we attending courses of lectures upon particular sciences, without being able to form a clear idea of the whole, or to give ourselves an account of what we are learning! When, by the means here recommended, we are enabled to know previously the great divisions and subdivisions of a system, it is not difficult to refer to those fixed points all our ideas, and at once to secure our knowledge already attained, and to accelerate our progress in the science. A system acquired by this method is not a dry and sterile series of words; it is a well-arranged classification of real knowledge. We learn in like manner all the systems of any science, whatever; however complicated they may appear.

"2. *Languages.* The learning and teaching of languages are not only facilitated by the system of Mnemonics, but acquire more light and more solidity than ever they were thought susceptible of. It is a fact well known to all my pupils, that, almost in any language whatever, the declensions may be learnt in a single hour, and all the conjugations in another. It can easily be conceived, that all the rest may be acquired with the same facility: but this is not all the advantage of my system: anomalies, irregularities of verbs, and similar difficulties which have been hitherto the torment of the scholars, become, by this system, the most pleasing and most instructive part of the language. My pupils are convinced, by the most satisfactory experience, that grammar is to be learned in the language, not the language in the grammar; and when the true way is once known, it becomes delightful to them to go on with ease and promptitude, by themselves, from one language to another.

" 3. *Prose and Poetry.* When we know pieces of prose or of poetry in such perfection that we are able to answer at pleasure to any single word, it is not to be imagined that in learning them we have to fix one word after another; but whatever we commit to our memory is there in such an order that we are sure to find it again whenever we may wish for it. The matter and the diction are necessarily distinguished, and every thing treated after its own nature, and we are therefore sure neither to omit any thing that is to be said, nor any word by which it is to be expressed. Persons who could never before get by heart either prose or poetry, have, by a short practice of this method, acquired the greatest readiness and facility.

" 4. *Geography*. This part of geography* has only been learned by my common manner of fixing in the memory proper names in general, and that of noting the arithmetical figures wherever we meet them. The true system of geography is the object of more than one of my lectures; and by this new system, the study acquires a degree of facility, and the science itself a degree of perfection, of which it was never thought susceptible, and yet without which it can never be essentially what it ought to be. Those who would think it needless, or of no use, to know the situation of every remarkable point of the globe by degrees of longitude and latitude, have to consider, if without these degrees, geography itself, or any geographical chart, could ever exist; and, if not, they surely cannot maintain that what is essential to geography itself may be neglected in the study of geography. This perfection is not only given to the science by my system, but is also attained with greater facility and certainty than even the former imperfect knowledge could be acquired by any other method whatever. The same principles are applicable with equal efficacy to all the subsidiary parts of a perfect geographical knowledge, and it is shown how to fix in the memory, for instance, the government, the extent, the population, and the military power, the products, the commerce, the manufactures, the arts and sciences, &c. of every state. Those who are acquainted with the principles of the present arrangement, cannot but feel how much easier it must be to compare, according to this plan, one kingdom with another by simple memory, than after any other plan, with all the assistance of books and systematic tables.

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* This refers to the longitude and latitude of the fifty cities repeated by the pupil.

" 5. *Chronology.* What is done with regard to the kings of England may be done with any chronological series of sovereigns; and though such a series presented nothing more than what may be considered as great epochs of history, even of those the present system offers a greater number than any other system of chronology, and fixes them more easily than it has ever been possible to do by all those ingenious historical tables which have been invented to assist the memory in this interesting study. But the highest perfection of historical knowledge is certainly to know the whole history, not only by great epochs, but year by year, and fact by fact; and this perfection no other system has ever been able to afford.

"6. *Multiplication*. To make a multiplication, consisting of a greater number of figures in the multiplier as well as in the multiplicand, only by memory, without writing any thing, may certainly in many cases be desirable, or of great utility, and is at least a certain proof that the principles of the present method reach every where, and that to its means nothing is too difficult or too complicated. It is undoubtedly of the highest importance to be able to fix in our minds the numbers in general. Statistic geography, history, mathematics, in short, almost every science is full of numerical figures. Multiplication tables, square and cube numbers, logarithms, algebraic formulæ, and all the mathematics can be submitted to those rules."

Since the period of M. VON FEINAIGLE's arrival in this country, he has been delivering a variety of *courses* of fifteen or sixteen lectures each, for which the charge of five guineas has been made; but the pupil is at liberty to attend any particular lecture, a second time, should he not sufficiently comprehend it at the first hearing. M. Von Feinaigle has not confined his visits to the metropolis: Edinburgh, Glasgow, Liverpool, etc. etc. have, in the summer season, been, successively, the theatre of his exertions.

CHAP. I.

Principles.

THE memory may be compared to a warehouse* stored with merchandise. A methodical arrangement of the contents of such a repository, enables its owner to find any article that he may require, with the utmost readiness. With a general knowledge of the contents of a library, and of the manner in which the books are distributed, a person may, even when absent from the spot, determine, with certainty, the situation of any particular book.† "Medallists," says Mr.

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* Memory is, as it were, the storehouse of our ideas; for the narrow mind of man not being capable of having many ideas under view and contemplation at once, it was necessary to have a repository to lay up those ideas, which at another time it might make use of. *Lock on the Human Understanding*, vol. i. p. 111.

† The well known anecdote of MAGLIABECHI, librarian to the Grand Duke of Tuscany, COSMO III. will suffici-

ADDISON,* "upon the first naming of an emperor, will immediately tell you his age, family, and life. To remember where he enters in the succession, they only consider in what part of the cabinet he lies; and by running over in their thoughts such a particular drawer, will give you an account of all the remarkable parts of his reign." If our ideas were arranged with equal method and order, the mind would turn to them, with the like facility.

Sensible objects have a powerful effect in recalling to the mind the ideas with which it was occupied when those ideas were presented. Thus the sight of any remarkable scenes in the course of a second journey, will frequently remind a person of the subject of which he was thinking or talking when he last travelled that road; or, to adopt the elegant language of Mr. FOSTER.† "Places and things which have an association

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ently illustrate and confirm this fact. The Grand Duke having asked Magliabechi whether he could procure a book that was particularly scarce, he replied, 'no, sir, it is impossible, for there is but one in the world, that is in the Grand Signior's library at Constantinople, and is the seventh book on the second shelf, on the right hand side as you go in.'

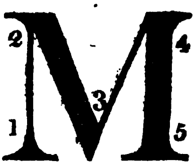
* Dialogue upon the usefulness of ancient Medals, pp. 21, 22, 12mo. 1726.

† Essays, p. 12. For a very pretty illustration of this subject, see also Spectator, No. 417.

with any of the events or feelings of past life, will greatly assist the recollection of them. A man of strong associations finds memoirs of himself already written on the places where he had conversed with happiness or misery. If an old man wished to animate, for a moment, the languid and faded ideas which he retains of his youth, he might walk with his crutch across the green where he once played with companions who are now probably laid to repose in another spot not far off. An aged saint may meet again some of the effects of his early piety in the place where he first thought it happy to pray. A walk in a meadow, the sight of a bank of flowers, perhaps even of some one flower, a landscape with the tints of autumn, the descent into a valley, the brow of a mountain, the house where a friend has been met, or has resided, or has died, have often produced a much more lively recollection of our past feelings, and of the objects and events which caused them, than the most perfect description could have done."

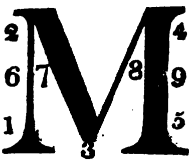
Indeed, it will be found upon investigation, that *locality* is the most efficacious medium of reminiscence: and that system of memory will be the most serviceable, which brings this principle into the most extensive operation. For this reason, *locality* (or, the connection of our ideas with places) is made the foundation of the present system. In this respect, it is analogous to the scheme of Mnemonics practised by the antients, but it is here applied much more extensively and advantageously than it was by them.

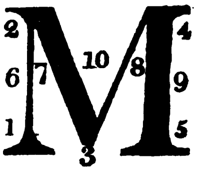
A room having generally four walls, the most obvious division of it is, into four sides, and each wall or side may be subdivided into pannels or compartments. Accordingly, the antient system divided a wall into five spaces. Thus, suppose the letter M to be represented on a wall as under:



Five spaces are thus gained in the places marked by the figures 1, 2, etc. Every wall of the room was, in imagination, divided in this manner; and this plan was applied to as many rooms as were found necessary to the extent of each particular scheme—every room being similarly divided into four sides,—and every side being subdivided into five compartments. Thus, any idea which, according to this method, had been associated in the mind with the forty-eighth compartment, would be placed in the third compartment of the second wall, in the third room.

But as few compartments could be obtained on each wall by these means, the calculation of high numbers would be exceedingly difficult. To remedy this defect, each wall might be divided into nine or ten compartments, thus:





If a wall be divided into nine parts, there will be 36 compartments in every room. In order to ascertain the situation of any particular number, it is to be considered in relation to the total number of the subdivisions. For example, if the situation of number 48 be required; according to the last mentioned division of the rooms, it is to be found by considering the proportion which that number bears to 36, the total number of the compartments in this arrangement. If the number in question be less than this total, the place inquired after will be obvious; thus 12 being within the number 36, must, of necessity, be in the first room: being above 9, it is equally clear that it cannot be on the first wall, and being less than 18, it must, necessarily, be on some part of the second wall: and as it exceeds the number of the first wall by 3, it follows, of course, that its place must be in the third compartment of the second wall. If the number in question be higher than the number of the compartments in one room, its place will be readily found by dividing it by that number. Thus, suppose 48 to be the number whose place is required:

$$\begin{array}{l} 36)48(1.\ 2 \\ \hline 9)12(1.\ 2 \\ \hline \quad 3 \end{array}$$

As 48 exceeds 36, we know that it cannot be in the first room, the 1 is therefore changed into 2; and the fraction remaining, shows it to be in the twelfth compartment. There being nine compartments on every wall, this remainder, or number of the compartment, is divided by 9, for the purpose of ascertaining the wall. Now, as the divisor is contained more than once, but not twice, in the dividend, it follows that the compartment sought must be on the second wall; the remainder gives the specific compartment. This operation, then, shows that 48 is in the third compartment, on the second wall, in the second room. This was the plan adopted by the antients when they divided their rooms into parts; but being both complicated and difficult, it has been rejected in the present system, and another scheme has been introduced in its place, which is more simple in its construction—less difficult in its application—and much more extensive in its powers.

We shall now proceed to explain the mode of dividing a room according to the *New System of Memory*, and to develop the principles of the art. It is, however, necessary to premise, that the pupil must not attempt too much at first, but should proceed gradually in the acquisition of this system; for his ultimate success in it will greatly depend upon a perfect knowledge of the first principles.* As in mathematics no problem can be demonstrated without understanding all the preceding demonstrations,—so every advance in this art, must be grounded on the full possession of all the antecedent doctrines.

We shall divide a wall in the following manner:

1	2	3
4	5	6
7	8	9

The figures are arranged from left to right, in the usual manner of writing; and for the more easily remembering their situation, it will be found that if two lines be drawn diagonally, from the four corners of the figure, they will intersect all the odd numbers, (See Plate I. fig. 1.) There is now a single wall divided into nine squares or compartments; these we shall name *places*, and say, the first place, second place, third place, etc. etc.

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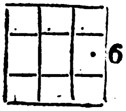
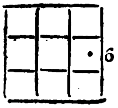
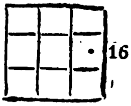
* Assumendus usus paulatim, ut pauca primum complectamur animo, quæ reddi fideliter possint: mox per incrementa tam modica, ut onerari se labor ille non sentiat, augenda usu, et exercitatione multa continenda est, quæ quidem maxima ex parte memoria constat.—*Quinct. Inst. Orat. lib.* X. OPERA, TOM. II. p. 253. *Ed. Bipont.* 1784.

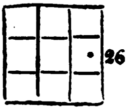
The same mode must be pursued with the three remaining walls in this room; by these means, four walls are obtained—each being divided into nine *places*. In order to find the number 36 in this room, we should naturally say four times nine will be 36, and should, of course, conclude that 36 would be in the last place of the last side or fourth wall of the room: but this calculation is erroneous; 6 must ever be in the same situation, which will be that occupied by the point in the following figure:

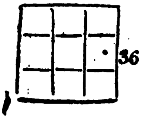


The place occupied by the number 6, in all the four walls, would be thus designated:



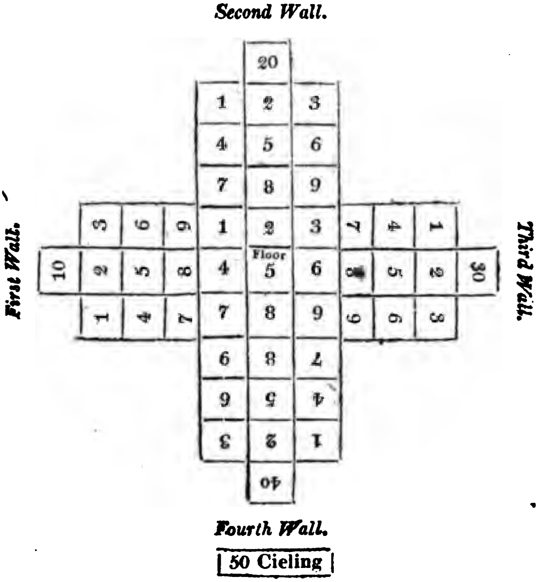






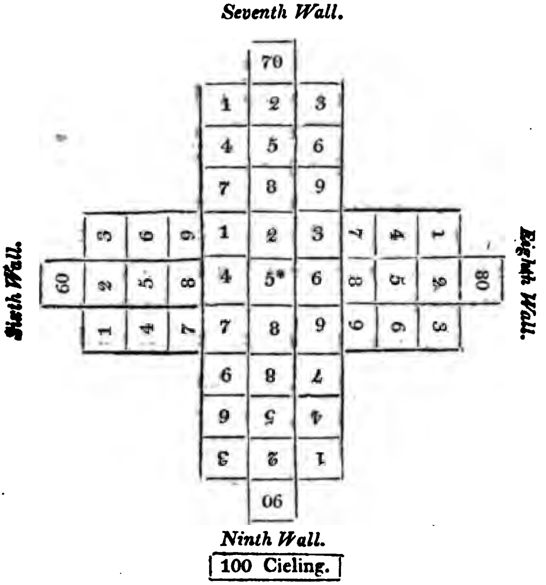
It must now be determined how we are to reckon these walls: if we stand in a room with our back to the windows, the first wall is on our left, the second before us, the third on our right, and the fourth behind us. We shall, however, commence with the floor, and divide it into nine parts in the same manner as the walls. Where are 10, 20, 30, 40, etc. to be placed? Every decade begins a new series, and the decimal is placed on the cieling of the room over its proper wall; thus, the first decimal, or 10, will be over the first wall; the second decimal, or 20, will be over the second wall; the third decimal, or 30, will be over the third wall; the fourth decimal, or 40, will be over the fourth wall; the fifth decimal, or 50, as its tenth part exceeds the number of walls, will be assigned to the *cieling* of the room, and will consequently be the highest number in the first room, forming the connecting link between this room and the second.

FIRST ROOM.



As one room will not supply us with sufficient numbers, a second room must be provided. The floor of the second room is denominated the *fifth wall*, the wall on the left, the sixth; the wall before us, the seventh; that on our right, the eighth; and the one behind us, the ninth; and as the number 50 was upon the cieling of the first, so the number 100 will be upon the cieling of the second room.

SECOND ROOM.



Numbers, probably, originated from holding up the fingers of the hand thus: |, | |, | | |, | | | |; five was made by holding up the thumb and little finger, with the other fingers down, thus $^{\text{thumb}}$V$^{\text{finger}}$ forming the numeral V; six was made by erecting another finger and continuing the former position; thus VI and VII,

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* Floor or fifth wall.

VIII and VIIII, in the same way, by adding a finger each time: ten was formed from two fives, thus, $\overset{\mathrm{V}}{\Lambda}$ making X.

The learner should now exercise himself in finding the situation of the different numbers in the two rooms. Where, for example, are 29, 47, 35, 21, 62, 82, 99, etc. The *room* must be first ascertained; as to this there can be no difficulty, for as 50 is the lesser number in the first room, all the numbers exceeding 50, and as far as 100, will be found in the second room.

Having found the *room,* the left hand figure will denote the *wall,* and the right hand figure will show the *place;* thus, 29 is in the first room, second wall, and ninth place; 47, fourth wall, seventh place; by cutting off the left hand figure, the numerical order of the wall is given, and the remaining figure acquaints us with the place.

In order to remember a series of *words,* they are put in the several squares, or places, and the recollection of them is assisted by associating some idea of relation between the objects and their situation; and, as we find by experience, that whatever is ludicrous, is calculated to make a strong impression upon the mind, the more ridiculous the association the better. Being provided with two rooms, we will take the floor of the first room, and place something in each of the nine squares. In illustration of this experiment, sensible objects will be given, as the association of ideas between them and the places is most striking.

1 Apple	2 Monkey	3 Man
4 Ship	5 Pipe	6 Cap
7 Tankard	8 Boat	9 Tree

The ideas of these images must be connected together, and it will then be almost impossible to forget the order in which they are arranged. The first is an *apple,* the second *a monkey*; this monkey takes the apple, eats, and offers it to the *man* who is in the third place; the man is just going to embark on a long voyage, and for this purpose a *ship* will be in the fourth place; but he will smoke his pipe before he leaves his native country;—*pipe* is in the fifth place;—and when he has finished smoking, he calls for his *night-cap,* which will be found in the *sixth* place; before he retires to rest, he wishes for another tankard of ale; *tankard* occupies the *seventh* place. In the morning when this man awakes, a boat is ready to convey him to the ship; this boat is in the *eighth* place; a *tree* is found in the *ninth* place—it shall be a willow-tree, and must grow by the water-side, on the very identical bank from which the man embarks in the boat. Any different objects may be taken promiscuously, and the connection made between them, at the moment, as chance or fancy bids. The chief use of this example is to induce a habit of fixing certain objects in a regular order, that we may always know where to find them. For this purpose the pupil should exercise himself in the numerical situation of the different objects, and be enabled to determine it quickly.

The floor and the walls are *localities* on which the figures and words must be arranged, in the several places or squares, in the order above described. Were a series of twenty-six figures to be taken, for instance, the following:

7 9 2 0 7 9 2 6 3 1 4 5 2
8 7 9 6 5 7 8 9 6 4 3 1 4

Or a series of consonants thus:

f l l m n g m f p r s t r s r n

(Full many a gem of purest ray serene.)

or any other series of figures, or consonants, it would be found very difficult to remember them. The figures, and the letters, are merely signs of signs, and cannot easily be fixed in the memory; the understanding having no exercise. The elements of words must, therefore, be sought for. DR. GREY changed figures into letters, and thus made words; but these words could not be fixed in the memory without constant repetition, and strenuous application; the different words required to be remembered in his *Memoria Technica*, being almost equally burthensome with the facts and dates which they were intended to imprint upon the memory. The mode of changing figures into letters was known long before the time of Dr. Grey. The substitution of letters for figures was practised by most antient nations; in the Hebrew and Greek languages, there are no arithmetical signs, but the letters of the alphabet are used in their place. Shopkeepers and others, from an early period, had been in the habit of marking the articles which they had to sell, with certain letters, as arbitrary symbols, for the prices in pounds, shillings, and pence.

We now take the consonants, and attach one or more to the series of figures, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0; each figure having its appropriate consonant. (See Plate I. fig. 2. The consonants only are resorted to, for they compose, like the skeleton of the human body, the principal parts; the vowels are but the ligaments.

The letters appropriated to the figures are not merely arbitrary, but are adapted as nearly as possible to the form of the figures.*

t, like the figure 1, is a perpendicular, or down stroke, and differs only from it, in the addition of the small horizontal line drawn across the upper part of it; *t* is more like the figure 1, than any other consonant, if perhaps, we except the letter *l*. An additional reason for assigning the letter *t* to 1 is, that it occurs in the word uni*t*.

n, is the appropriate letter to represent 2, there are two down strokes in it.

m, furnishes us with three down strokes, it will then give the idea of 3: if we place a 3 thus ω, it will form a tolerable outline of the letter *m*.

r, is to represent 4: *r* when written, (See

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* Dr. Grey who assigned both vowels and consonants to figures, in a manner perfectly arbitrary, has the following effect:

a	*e*	*i*	*o*	*u*	*au*	*oi*	*ei*	*ou*	*y*
1	2	3	4	5	6	7	8	9	0
b	*d*	*t*	*f*	*l*	*s*	*p*	*k*	*n*	*z*

Here *a* and *b* stand for 1, *e* and *d* for 2, *i* and *t* for 3, etc.

Plate I. fig. 2.) resembles somewhat a 4. The letter *r* occurs also in our word *four*; in the German *fohr*; in the Dutch *vier*; in the Latin *quatuor*; in the French *quatre*; in the Spanish and Portugueze, *quatro*; in the Italian *quattro*; in the Greek *τέσσαρες*; in the Russ, *chetyïre*; and in a variety of other languages.

The English L was borrowed from the Romans; they had it from the Greeks, and they again from the Hebrews, whose *lamed* is much like our L, excepting that the angle is somewhat more acute. L was used as a numerical letter for *fifty*, and may, therefore, be assigned to the figure 5. *d*, in writing is the reversed form of this figure. (See Plate I. fig. 2.)

c, *k*, *g*, *q*. The figure 7, with a slight curvature, may be made to resemble a crooked stick, and as we shall remember this stick the better, if something be hung upon it, a *cage* shall be suspended there. In the word *cage* we obtain the consonants *c* and *g*; *k* also is added to the number, for *c* is more frequently pronounced hard (*ka*) than it is soft (*se*); *q* being a gutteral and a *crooked* letter, shall go along with the cage and the stick. For the figure 7 there are then *c*, *k*, *g*, and *q*.

b, *h*, *v*, *w*. In the figure 8 there are two noughts, or two round things: these may be converted into *beehives*, and if one be placed upon the other, there will be a tolerably accurate idea of the figure 8. In the word *beehive*, are obtained *b, h, v;* and *w* may be added, for it is compounded of *vv*.

p, f. The figure 9 is not unlike *a pipe*, and as a pipe is seldom used without a *puff* of smoke issuing from it, we have the *p* and *f* in these two words; they are inseparably connected, and cannot easily be forgotten.

s, x, z. The o being a round body, it may be compared to a wheel or grinder in a mill; this wheel, when in swift rotation, gives out a hissing sound, and the hissing consonants *s, x, z,* are attached to the cipher. *x* is formed from two half *circles;* and *z* is the first letter of the word *zero*.

These letters, and the figures which they are intended to represent, should be impressed strongly upon the memory, as the letters must be converted into words, by the introduction of vowels

8	1	3	0	7	9	2	6
b	*t*	*m*	*s*	*c*	*p*	*n*	*d*
3	1	4	5	1	8	0	9
m	*t*	*r*	*l*	*t*	*b*	*s*	*p*
6	5	7	8	9	6	4	3
d	*l*	*c*	*b*	*p*	*d*	*r*	*m*

The two consonants representing two figures must be converted into a word, to which should be affixed some striking idea; and the images represented, connected together. The objects when selected, each being a word, must be arranged in the different *places*, beginning with the floor, and proceeding to the first, second, and third walls, etc. In making these words, it is necessary that the two consonants required should be the two *first* in the word; if there be more than two it is of no importance, as the two first only will be needful. It will not be difficult to make a perfect figure from the skeleton we have just seen.

Floor of the First Room.

BaT	**MouSe**	**CaP**
NeeDle	**MuTton**	**RoLl**
TuB	**SoaP**	**DoLl**

First Wall of the First Room.

CaBbage	**PuDding**	**RuM**

A *bat* is seen flying after a *mouse,* which shelters itself under a *cap,* stuck full of *needles.* There is some *mutton* for dinner, and a *roll* to eat with it. The *tub* and *soap* shew that it is washing-day; the servants playing with the children and their *doll,* have forgotten to boil the *cabbage* and the *pudding.* As a compensation for this loss, a large bottle of *rum* is produced. By this method, it will be easy to commit to memory a long series of figures, to repeat them backwards or forwards, to name the first, fourth, fifth, eighth, etc. or to say how many fours, fives, noughts, etc. are contained in the series.

The converting of figures into letters, and making *sense* by the introduction of vowels, will be found applicable to many of the purposes of common life. If we purchase any articles, and would remember the measure or weight of them, and thus prevent fraud in the shop-keeper, it is only necessary to change the figures into a word or words, and connect them with some strange or ludicrous idea. Should we buy 32 yards of cloth, muslin, etc. it is easy to say, that a *man* brought home the cloth, and the measure is given to us: if 30lbs of cheese, a *m*ouse that had been gnawing the cheese, would fix the weight immediately. The number of a hackney-coach, or of a house may be preserved in the same manner. The purposes in domestic life to which this system is applicable, are almost infinite, and need no further specification.

We have already learned to divide a room into parts, as the floor and walls,—to subdivide these into *places*,—to change figures into letters,—and to form words; and, by these means, to remember series of figures, or of things. It would be a material advantage to us, to have some fixed or certain rooms: we may take, for instance, those with which we are best acquainted, and fix the different *places* upon the various articles of furniture, as a chair, a chest of drawers, etc. What we have learned, hitherto, is not sufficient: as yet, an intellectual order only has been obtained; *numbers* have been localised, but there is still a deficiency,—the *realities* are wanting.

If the reader has practised our instructions in a room in which he is accustomed to spend the greater part of his time, and this room should have been hung with pictures, engravings, or plans, or ornamented with busts, etc. he will have been very materially assisted in the remembrance of his *places*, or localities. We can, after a little practice, ascertain the order of different things placed in a room which we have long frequented. The transition is slight, but the impression will be permanent. Let us fill the squares or places with some pictures of our own drawing: the two rooms will be then furnished, and it will be as easy to remember the symbols, or hieroglyphics, as to remember the situation or place of any picture, or article of furniture in a room. Instead of having a carpet on the floor, we can suppose that the floor is inlaid or constructed of mosaic. This will allow us to put symbols there.

The outlines of the symbols are intended to represent, as accurately as possible, the various figures in the two rooms, so that they may be permanently fixed in the memory. (See Plates II. and III.) And here we dismiss the pupil for a season, giving a general hint, that it will be advisable to make himself perfectly familiar with the situations of the different symbols, before he thinks of looking into the next chapter. Until a knowledge of these symbols be obtained, no further progress can be made in the system. It is, at least, indispensably necessary, that the pupil should answer with facility to any questions put to him respecting the *first* room, containing fifty symbols; the second room may be acquired at leisure.

The following are the names attached to the different symbols:

First Room.

1 Tower of Babel.
2 Swan.
3 Mountain, or Parnassus.
4 Looking-glass.
5 Throne.
6 Horn of Plenty.
7 Glass-blower.
8 Midas.
9 Flower, or Narcissus.
10 Goliath, or Mars.
11 Pillars of Hercules.
12 David with the Lion.
13 Castle, or Nelson's Monument.
14 Diogenes, or Watchman.
15 Æsculapius, or Serpent.
16 Ceres, or Gleaner.
17 Archimedes, or Carpenter.
18 Apollo.
19 Robinson Crusoe.
20 Peacock.
21 Vaulter, or Rider.
22 Cockfighting.
23 Pegasus.
24 Elephant.
25 Sancho Panza.
26 Charioteer.
27 Don Quixote.
28 Pack-horse.
29 Standard-bearer.
30 Sysiphus.
31 Cupid.
32 Diana.
33 Clouds, or Sky.
34 Noah's Ark.
35 Curtius.
36 Hermitage.
37 Miner.
38 Moses.
39 Vesuvius.
40 Pleasure Garden.
41 Monument.
42 Golden Calf.
43 State Bed.
44 Piano-Forte.
45 Bajazet.
46 Fountain, or Square.
47 Vulcan.
48 Apis.
49 Orange-Tree.
50 Bacchus.

Second Room.

51 Pigmalion.
52 Jupiter.
53 Neptune.
54 Toilette, or Penelope.
55 Fleet.
56 Guitar Player.
57 Conjurer.
58 Orpheus.
59 Samson.
60 Still.
61 Bagpipes.
62 Phœnix.
63 Temple of Glory.
64 Fame.
65 Schoolmaster.
66 Tents.
67 Mutius Scœvola.
68 Mercury.
69 Mausoleum.
70 Lottery, or Fortune.
71 Saturn.
72 Centaur.
73 Pedlar.
74 Thresher.
75 Garden Engine.
76 Gardener.
77 Mowers.
78 Pagan Priest.
79 Direction-Post.
80 Apothecary.
81 Cymbal-Player.
82 Trojan Horse.
83 Actæon.
84 Cabriolet.
85 Europa.
86 Brewer.
87 Hunter.
88 Bullfighting.
89 Hercules.
90 Burning-Glass.
91 Tantalus.
92 Hawker, or, Sportsman.
93 Golden Fleece.
94 Lime-Tree.
95 Shepherd.
96 Cap of Liberty.
97 Solomon.
98 Trophy.
99 Avenue.
100 Justice.

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CHAP. II.

Chronology.

THE pupil is, by this time, supposed to have fixed all the symbols in the first room, and to be enabled to tell readily the first, seventh, thirtieth, forty-ninth, etc. and also to say what place is occupied by Midas, Sisyphus, etc. In making the *application* to chronology, we shall confine ourselves to the succession of the kings of ENGLAND since the conquest.

1. WILLIAM THE CONQUEROR. A word must be now made from William; the first half *wil* is taken, and to this is added *low*, by which *willow* is obtained; this enables us to remember *William.* The willow is fixed upon the *Tower of Babel*, our first symbol; we have then *William I.* but another circumstance remains; he was the *conqueror*:—we hang some *laurel*, the reward of valour, and the crown of conquest, upon the willow tree. The *date* is yet wanting:

we say the laurel is dead; in the word *dead*, are *d, d* for 66; the 1000 being understood through the whole series.*

2. WILLIAM RUFUS, or WILLIAM II. There must be *two willows*, one on each side of the *swan;* the swan is put into a red (*bag*)*:* by making the bag *red*, we preserve the meaning of the Latin word Rufus.

3. HENRY I. There is *one hen* upon the *mountain* tossing up the ground; (*toss.*)

4. STEPHEN. The *looking-glass* is very much *stiffened;* there is a watch placed before the glass; this is (*timely*). The word *stiffened* will recal to the mind the name of *Stephen*.

5. HENRY II. A (*taylor*) sitting upon the *throne*, with *two hens*, one under each arm.

6. RICHARD I. This was the *first rich* man,—the *horn* of *plenty* is before him. The first rich man, probably, pilfered from other people; he must have been a (*thief*).

7. JOHN. The *glass-blower's* name was John (*Taffy*).

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* As the reader will find at p. 60. a tabular view of this application, we shall merely explain the manner of connecting the different images, inclosing the word which gives the date in a parenthesis.

8. **Henry III.** *Midas,* or the man with the long ears, hast just received a present of *three hens;* he puts one in each ear, and one in his mouth, the hens are so near to each other, they are almost *(united).*

9. **Edward I.** To fix the name of Edward, we convert the verb *to ward,* that is, to watch, into a substantive, and say here is one *ward,* guard, or soldier, watering *Narcissus,* or the flower, with an *(engine).*

10. **Edward II.** There are *two* wards, or guards, behind *Goliath,* each in a *(mask).*

11. **Edward III.** Three soldiers as guards between the *Pillars of Hercules,* playing with a *(monkey).*

12. **Richard II.** This is the second rich man, who meets *David putting his hand into the lion's mouth;* David is mocking at the lion's strength. *(mock).*

13. **Henry IV.** We take a *(muff),* put *four hens* in it, and place it on the *pyramid.*

14. **Henry V.** *Diogenes* has *five hens* in his lantern; they are very noisy and troublesome,—*(rout'em).*

15. **Henry VI.** *Æsculapius,* or the doctor, is very much annoyed by *six hens,* which are *(running)* round the serpent.

16. **Edward IV.** Here are *four* soldiers

taking away poor *Ceres,* and putting her in a *(redoubt).**

17. **Edward V.** *Archimedes,* or the carpenter.

18. **Richard III.** *Apollo.*

As these two kings are of the same date, one word will be sufficient to fix it. Here are *five guards* preparing to rob the *third rich* man; *Apollo* is looking on, and amusing them with a tune on his lyre; in the mean while, *Archimedes,* or the carpenter, vociferates *(rob'em).*

19. **Henry VII.** *Robinson Crusoe* is seen to shoot *seven hens,* in a *(rebellion.)*

20. **Henry VIII.** There is a *Peacock,* with *eight hens* in her nest; they are young and cannot speak,—they are *(lisping.)*

21. **Edward VI.** We have here the *vaulter,* or rider; one man is a sufficient weight for a horse; but our horse must carry seven. There are *six guards,* or wards, upon this horse, besides the vaulter, who are all scrambling for a piece of a *(lark).*

22. **Mary.** There must be some rejoicings where there is a *cock-fight;* it is very possible that the town may be *(illuminated).*

23. **Elizabeth.** This queen had so flourishing a reign, that she is *(allowed)* to ride upon *Pegasus.*

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* As the *b* is not sounded in pronunciation, the *r, d, t,* are the letters which give the date.

24. JAMES I. The word *chains* sounds somewhat like *James;* we will, therefore, put the *Elephant* in chains : what *(dismal)* chains.

25. CHARLES I. Poor *Sancho Panza* upon his ass! Poor fellow, he met with many *(denials).*

26. CHARLES II. The *charioteer* is running a race; the *(odds)* are against him.

27. JAMES II. *Don Quixote* must be put in *chains;* he must have two sets of chains; he shall have *(double)* chains.

28. WILLIAM III. The patient *packhorse* travelling along the accustomed road, arrives at that part where *three willows* have been planted : how melancholy it is to see so many willows! *(do weep.)*

29. ANNE. The *Standard Bearer* is just arrived on a visit to *(cousin)* Anne.

30. GEORGE I. *Sisyphus* is rolling up the hill " his huge round stone,"—but he stops and listens to some one who is playing on the *(guitar).**

GEORGE II. This sovereign is a *(king)* between two kings of the same name.

GEORGE III. has had some important concerns with *(Cadiz.)*

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* No. 30, as it completes a wall, may include George I, II, III.

TABULAR VIEW OF THE CHRONOLOGY OF THE KINGS OF ENGLAND FROM THE CONQUEST.

Numerical Order.	Name of the King.	Symbol.	Word giving the date.	Date.
1	William the Conqueror,	Tower of Babel,	DeaD,	1066
2	William II. (Rufus.)	Swan,	BaG,	1087
3	Henry I.	Parnassus,	ToSS,	1100
4	Stephen,	Looking-Glass,	TiMeLy,	1135
5	Henry II.	Throne,	TayLoR,	1154
6	Richard I.	Horn of Plenty,	THieF,	1189
7	John,	Glass-Blower,	TaFFy,	1199
8	Henry III.	Midas,	uNiTeD,	1216
9	Edward I.	Narcissus, or, the Flower,	eNGiNe,	1272
10	Edward II.	Goliath,	MaSK,	1307
11	Edward III.	Pillars of Hercules,	MoNKey,	1327

TABULAR VIEW OF THE CHRONOLOGY OF THE KINGS OF ENGLAND FROM THE CONQUEST.

Numerical Order.	Name of the King.	Symbol.	Word giving the date.	Date.
12	RICHARD II.	David and the Lion,	MoCK,	1377
13	HENRY IV.	Pyramid,	MuFF,	1399
14	HENRY V.	Diogenes,	RouT'eM,	1413
15	HENRY VI.	Aesculapius,	RuNNing,	1422
16	EDWARD IV.	Ceres,	ReDoubT,	1461
17	EDWARD V.	Archimedes,	rOB'eM,	1483
18	RICHARD III.	Apollo,		1483
19	HENRY VII.	Robinson Crusoe,	ReBeLlion,	1485
20	HENRY VIII.	Peacock,	LiSPing,	1509
21	EDWARD VI.	The Vaulter,	LaRK,	1547
22	MARY,	Cock-fighting,	iLLuMinated,	1553

TABULAR VIEW OF THE CHRONOLOGY OF THE KINGS OF ENGLAND FROM THE CONQUEST.

Numerical Order.	Name of the King.	Symbol.	Word giving the date.	Date.
23	Elizabeth,	Pegasus,	aLLoWed,	1558
24	James I.	Elephant,	DiSMal,	1603
25	Charles I.	Sancho Panza,	DaNieL,	1625
26	Charles II.	Charioteer,	oDDS,	1660
27	James II.	Don Quixote,	DouBLe,	1685
28	William III.	Packhorse,	Do WeeP,	1689
29	Anne.	Standard Bearer,	CouSiN,	1702
30	George I.	Sysiphus,	GuiTaR,	1714
	George II.		KiNG,	1727
	George III.		CaDiZ,	1760

In order to enable the pupil to make a further application of the mnemonical principles to chronology, we subjoin the following table:—he can, at his leisure, resort to more copious sources of information.

Table of the Principal Historical Events

From the Creation to the Birth of Christ.

Before Christ.	
4004	The creation of the world, and of Adam and Eve.
4003	The birth of Cain.
3017	Enoch for his piety, translated to heaven.
2348	The old world destroyed by a deluge.
2247	The tower of Babel built about this time, by Noah's posterity, upon which God causes the confusion of tongues.
2234	Celestial observations first made.
2181	The kingdom of Egypt founded.
2059	The kingdom of Assyria founded by Ninus.
1921	The covenant of God with Abram.
1897	Sodom and Gomorra destroyed for their wickedness.
1856	The kingdom of Argos and Greece begins under Inachus.
1822	Memnon, the Egyptian, invents letters.
1635	Joseph dies in Egypt; which concludes the book of Genesis.
1574	Aaron born in Egypt.
1571	Moses, brother to Aaron, born in Egypt, and adopted by Pharaoh's daughter, who educates him in all the learning of the Egyptians.
1556	Cecrops begins the kingdom of Athens, in Greece.

Before
Christ.

1546 The kingdom of Troy begun by Scamander.

1493 Cadmus carried the Phenician letters into Greece, built the citadel of Thebes, and is the first king.

1491 The Israelites delivered from Egypt after 430 years of sojourning.

1485 The first ship appeared in Greece.

1453 The Olympic games first celebrated at Olympia, in Greece.

1452 The Pentateuch, or first five books of Moses, written in the land of Moab;—the death of Moses.

1451 The Israelites led, under Joshua, into the land of Canaan.

1356 Eleusinian mysteries introduced at Athens.

1326 The Isthmian games introduced at Corinth.

1267 The Argonautic expedition undertaken.

1198 The rape of Helen by Paris; which, in 1193, gave rise to the Trojan war, and the ten years siege of Troy, by the Greeks, who took and burnt that city.

1182 Æneas lands in Italy.

1048 David is sole king of Israel.

1004 The temple dedicated by Solomon.

894 Money first made of gold and silver.

884 Lycurgus reforms the constitution of Lacedemon.

869 Carthage founded, in Africa, by Dido.

814 The kingdom of Macedon begins.

776 The first olympiad begins in this year.

753 Æra of the building of Rome, by Romulus, first king of the Romans.

720 Samaria taken, after three years' siege; and the kingdom of Israel annihilated by Salmanazar, king of Assyria, who carries the ten tribes into captivity. The first lunar eclipse on record.

600 Thales, of Miletus, travelled into Egypt; where he acquired the knowledge of geometry, astronomy, and philosophy; returned into Greece, and established his philosophy.

Before Christ.

600 Maps, globes, and the signs of the Zodiac invented by Anaximander, the disciple of Thales.

597 Jehoiakim, king of Judah, carried captive, by Nebuchadnezzar, to Babylon.

587 Jerusalem taken, after eighteen months' siege.

559 Cyrus, the great king of Persia.

538 The kingdom of Babylon finished, that city being taken by Cyrus; who, in 536, issued an edict for the return of the Jews.

534 The first tragedy performed at Athens, on a waggon, by Thespis.

526 Learning encouraged at Athens, and the first public library founded.

515 The second temple at Jerusalem finished under Darius.

509 Tarquin, the seventh, and last king of the Romans, expelled, and Rome became a republic.

504 Sardis taken and burnt by the Athenians; which caused the Persians to invade Greece.

490 The battle of Marathon, in which Miltiades defeated the Persians.

486 Æschylus, the Greek poet, first gains the prize of Tragedy.

481 Xerxes begun his expedition against Greece.

480 The Spartans, under Leonidas, cut to pieces at Thermopylæ.

Great naval victory gained by the Greeks over the Persians, at Salamis.

458 Ezra sent from Babylon to Jerusalem with the captive Jews, and the vessels of gold and silver, &c.

454 The Romans send to Athens for the laws of Solon.

451 The Decemvirs created at Rome; the laws of the twelve tables compiled and ratified.

431 The Peloponnesian war begins, which lasted twenty-seven years.

430 The history of the Old Testament finishes about this time. Malachi, the last of the prophets.

Before
Christ.

400 Socrates, the founder of moral philosophy among the Greeks, flourished.

371 The battle of Leuctra, the Lacedemonians defeated by the Thebans, under Epaminondas.

363 Epaminondas killed at the battle of Mantinea.

357 The Phocian or Sacred war begins in Greece.

343 Syracuse taken by Timoleon; and Dionysius the tyrant, banished.

331 Alexander the Great conquers Darius, king of Persia.

285 Dionysius, of Alexandria, begins his astronomical æra, on Monday, June 26, being the first who found the exact solar years to consist of 365 days, 5 hours, and 49 minutes.

284 The Septuagint version made by order of Ptolemy Philadelphus, king of Egppt.

264 The first Punic war begins; which continued twenty-three years.

260 The Romans defeated the Carthaginians at sea.

237 Hannibal, at nine years old, swears eternal enmity to the Romans.

218 The second Punic war begins; which continued seventeen years.

190 The first Roman army enters Asia, and from the spoils of Antiochus, brings the Asiatic luxury first to Rome.

170 Antiochus Epiphanes plunders Jerusalem.

168 Perseus, King of Macedon, defeated by the Romans.

167 The first library erected at Rome, of books brought from Macedonia.

163 The government of Judea, under the Maccabees, begins; which continued 126 years.

149 The third Punic war.

146 Carthage, the rival of Rome, razed to the ground.

135 The history of the Apocrypha ends.

72 Mithridates defeated, and Pontus reduced to a Roman province.

Before Christ.

52 Julius Cæsar's first expedition into Britain.

47 Pompey defeated at the battle of Pharsalia, and afterwards slain in Egypt.

— The Alexandrian library burnt.

— The solar year introduced by Cæsar.

44 Cæsar killed in the senate-house by conspirators.

42 The battle of Philippi, in which Brutus and Cassius are defeated.

31 The battle of Actium; in which Mark Antony and Cleopatra were totally defeated by Octavius, nephew to Julius Cæsar.

30 Alexandria taken by Octavius: Antony and Cleopatra put themselves to death, and Egypt reduced to a Roman province.

27 Octavius obtains from the senate the title of Augustus Cæsar, and is made the first Roman emperor.

8 The temple of Janus shut by Augustus, as an emblem of universal peace.

John the Baptist and JESUS CHRIST born, four years before the commencement of the vulgar Æra.

CHAP. III.

Geography.

In the application of the Art of Memory to Geography, this science will be considered under the following heads; (1.) Principles. (2.) General Geography. (3.) Particular Geography. (4.) Statistics.

Sect. 1.—*Principles.*

Geographical charts represent the situation of cities, towns, seas, continents, etc. on the globe; but we will suppose that nothing of this kind has ever been fabricated; that there are no charts; if we wish to ascertain the relative situation of any places, the means must be invented to accomplish what is required, beginning with the first principles. Whenever the memory is to be treated with, we should employ the powers of reason. The charts must be drawn in our intellect, and we should proceed step by step; what is wanting in the memory, will be supplied by reason.

The earth being a round body,* it is represented by a globe; but as both sides of this globe cannot be seen at the same time, it must be divided into hemispheres or halves: there will then be an eastern and a western, or, a northern and a southern hemisphere.

Suppose a circle to be described, and a point placed within it; the situation of this point must be determined with relation to some other part of the circle. If a horizontal line be drawn across the circle and divide it equally, the line appears to us straight; but cannot, in reality, be so, because it is half the circumference of a globe. A perpendicular line is then drawn, and the hemisphere is divided into four equal quarters: each quarter containing 90° or one-fourth of 360°; every circle containg 360°. (See Plate I. fig. 3.) The horizontal line must be taken for the *equator*. The quarter then in which the dot or point appears, should be divided by 90 lines, but as this would completely conceal the surface of the diagram, and obliterate the little point itself, we will divide it into 9 parts. (See Plate I. fig. 4.)

The point is now evidently within the first stripe or line, and if these lines be named *ladders*, we shall say it is on the first ladder; but its situation is now only half determined. These ladders are divided into *steps*; and each has nine steps. This will be effected by drawing 8 horizontal lines across those already made. (See Plate I. fig. 5.) The point is still on the first ladder, but on what *step?* It is on the sixth *step*.

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* The earth is, as every one knows, an oblate spheroid, but it would be needless to descend to partieulars, in a general illustration.

Two rooms should be provided, with four walls in each; in the upper room is to be placed the northern hemisphere, and the southern is to be supposed under the northern, in the lower room. We will begin with the northern hemisphere, dividing it into four equal parts or quarters; transferring one quarter to the first wall. (See Plate I. fig. 6.

The former division of a wall was thus:

1	2	3
4	5	6
7	8	9

It will not, however, be more difficult to remember nine figures in one line, than in three. The floor of the upper room in which we stand is the equator; upon this we reckon the longitude. From the pole to the equator there are 90°, but we only place 60° on the wall, the remaining 30° being fixed in the ceiling. In each of these squares, there are 10° of longitude, and 10° of latitude.

The horizontal lines are parallels of *latitude*, and the perpendicular lines are meridians or circles of *longitude*.

The series of walls in the first room will be as follows:

I.	1	2	3	4	5	6	7	8	9
II.	10	11	12	13	14	15	16	17	18
III.	19	20	21	22	23	24	25	26	27
IV.	28	29	30	31	32	33	34	35	36

Upon referring to the globe, it will be found that the whole hemisphere, north of the equator, has been transferred into the first or upper room; the southern hemisphere being reserved for the room beneath.

Before we proceed further, the *meridian* must be fixed. This, in English charts, is taken from London, or more correctly from Greenwich, counting the longitude east and west from that place. The French place their meridian in Paris, but they mark also in their maps the longitude from Ferro, from which island, all the other European nations commence theirs; by these means, the longitude which is laid down on a foreign map is comprehensible by them, and the Parisian mode is easily understood by any other continental geographer, but our maps are not intelligible any where but in England.

In making our calculation we shall adopt the meridian of Ferro, because it divides the globe into those two equal parts or hemispheres, which are usually represented on maps. Suppose a place to be in 254° of longitude, and 43° of latitude; on what ladder, on what step, and on what wall will it occur? We must take 254, (and as it will be remembered our hemisphere is divided only into tens of degrees) we must cut off the unit figure, thus 25,4, and we have 25 left, but as the 25th ladder would include only those degrees under 250, and 254 being above that number, it is on the 26th ladder. To ascertain on what wall this 26th ladder is, and its numerical situation there, the figures 2 and 6 must be added together; the product gives the number of the ladder. By counting the difference between 6 and 8, thus 6, 7, 8, *three*, the number of the wall is given. In the latitude 43, the 3 is rejected, and 43 being past 40 it is on the fifth step. A place then in longitude 254 and latitude 43, will be found on the 26th ladder, fifth step; or on the third wall, eighth ladder, and fifth step.

If we read that an engagement had taken place between two ships in 324° longitude, 36° S. latitude, how shall we find on which wall this spot is situated? We know that south latitude must be in the lower room, and that 36 being more than 30, must be on the 4th ladder step. For the longitude, as in the foregoing example, we cut off the unit 32,4—324 is more than 320, therefore it must be on the 33rd ladder; these two figures are now added together; the product 6 gives the situation on the wall, and by counting from 3 to 6—3, 4, 5, 6, we get 4, which is the number of the wall. This event, therefore, took place near the mouth of the Rio de la Plata; on the 4th wall, 6th ladder, and 4th step, of the southern room.

Sect. 2.—General Geography.

We are now provided with a geographical net, with which all the different places may be taken, from the smallest to the largest. What we have learned in the common way on globes is soon forgotten, there being no connecting media to bring the different countries to our recollection. Supposing we are looking at a globe, and we fix our eyes upon England, we cannot see its antipodes; places can be seen only in one direction. The Chinese, when shown a map of the world, said, why put us up in a corner? we are in the centre. In fact, every where is the centre, and the centre is every where. The whole circumference is equally distant from us wherever we may be. The four quarters of the northern hemisphere being arranged on the four walls, when we are in the room, we can, in an instant, see every part of the hemisphere. (See Plate IV.)

On the *first* wall will be a part of the Atlantic Ocean, the whole of Europe and a great part of Africa and Asia.

On the *second* wall will be found the remainder of Asia, and a large proportion of the North Pacific Ocean.

On the *third* wall there is a continuance of the Northern Pacific Ocean, and a part of North America.

On the *fourth* wall there is the remainder of North America, part of South America, the American Islands or West Indies, and a great part of the Atlantic or great Western Ocean. This completes the northern hemisphere, and occupies the first or upper room.

In the *second* or *lower room,* (see Plate V.) on the first wall, we have a part of the Southern Atlantic Ocean, part of Africa, and the Indian Ocean.

The second wall is occupied by the remainder of the Indian Ocean, the Indian Archipelago, and by New Holland.

Tab: I

The *third* wall contains the Southern Pacific Ocean, and the South Sea Islands.

The *fourth* wall has nearly the whole of South America.

Thus there are in the northern Room the whole Continent of Europe and Asia, the greater part of Africa, the whole of North, and part of South America; the *lower*, or Southern Room containing the remainder of Africa and South America, the Asiatic Islands, Polynesia and Australasia.

Supposing the windows of our room to be on one side, if we stand with our back to them, the first wall is on the left; this wall is divided into nine ladders, which show the longitude, and each ladder into nine steps, giving the latitude.

On the *first* ladder, *first* step, there is almost entirely sea, being a part of the Atlantic Ocean; a small portion of Africa, however, is discovered. On this part Sierra Leone is situated. The square on which this fails is known by the number 11, (1st. ladder, 1st. step,)—here the symbol for 11 is, the *Pillars of Hercules.* These pillars are placed in the square; one pillar is fixed in the sea, the other on land. *Leone* will recal to mind the name of a *Lion;* a lion must be placed between the pillars, and the situation of this place will then be fixed in the memory.

On the *second* step there is a part of the Atlantic Ocean and of Africa; upon this part of Africa are Senegal, Cape Verde, and Goree; and the symbol for the 1,2th place (1st ladder, 2d step,) is *David with the lion;* if it be said that David in tearing the *sinews* of the lion, is *gored* by the animal; and that he has a *green cap* in his hand, these three places will be fixed in this square. It is quite sufficient if the words given recal the names of the places to our memory.

On the *third* step are the Canary Islands; these are somewhat like a cluster of birds (Canary Birds) that must fly round the *Pyramid,* the symbol for 1, 3, (1st ladder, 3d step.)

On the *fourth* step, there is part of Portugal, and the island of Madeira. The symbol for 14 is *Diogenes* with the lantern. This man is the proprietor of the island, and has come to Madeira from Lisbon, on purpose to drink a bottle of his favourite beverage.

On the *fifth* step is Cape *Finisterre.* The symbol for 15 is Æsculapius with his serpent; a serpent then shall be placed at the extremity of the land, *(Finis terræ.)*

On the *sixth* step there is a small part of Ireland. The symbol for 16 is *Ceres,* or the gleaner; she shall have a *garland* upon her head; *gar-land* and Ire-land are too much alike in sound to be easily forgotten.

On the *seventh* step is *Iceland.* The symbol for 17 is *Archimedes,* or the Carpenter; he is breaking up the ice, and that we may remember the name of the celebrated mountain, Hecla, we will say, that he acquits himself with very great *eclat.*

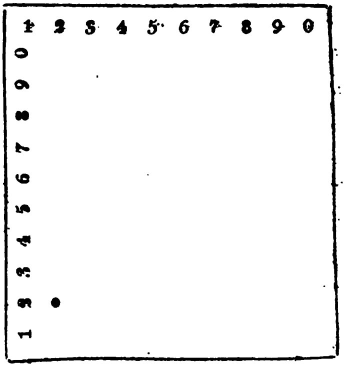
These illustrations seem amply sufficient to direct the pupil in the application of this art to geography, so far as it relates to the use of the symbols, and the connecting ideas to be associated with them.

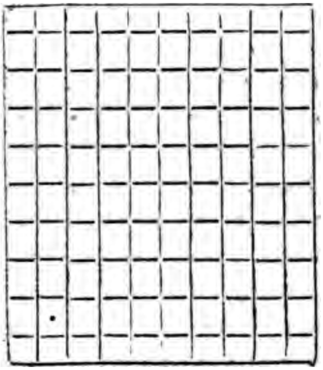
While we count our meridians all east from Ferro, it must be remembered, that in English maps, London, or rather *Greenwich,* is taken for the first meridian, from which the degrees are counted 180° East, and 180° West. If a place be described in longitude 121° west of London; to reduce it to the meridian from Ferro, 121° must be subtracted from 180°, (the whole number of degrees west,) the remainder is 59, which added to 180, and the 18° difference between the calculation from London and Ferro, will give the product 275°. A place then which is 121° west of London, may be said to be 257° east of Ferro. The meridian of *Paris* is 20° east from Ferro, and 2 from the meridian of London. This process is at once simple and correct, and will allow us to use a general meridian which will be intelligible on all maps, and to all persons.

The best mode of learning the geography is to take a chart of Mercator's projection of the earth, in which the degrees of latitude and longitude are marked by *tens*, that it may coincide with the divisions on the walls, each of the squares there containing 100°; 10° both ways. All the squares in the map must be covered with a sheet of paper, except one, that is the first step on the first ladder; the space taken up by the land in this square should be noticed, and the outline of the land described in the map, and traced upon a drawing, or diagram, of the first wall, divided into ladders, and ladder-steps, as seen before. These squares should be sufficiently large to show some of the principal projections of the land, that the most remarkable places may be inserted; thus constructing a small chart.

In the *lower room*, which contains the southern hemisphere, we must count *downward*, 1, 2, 3, 4, 5, 6, 7, etc. still beginning with the equator.

Every one of the small squares may be divided into degrees.



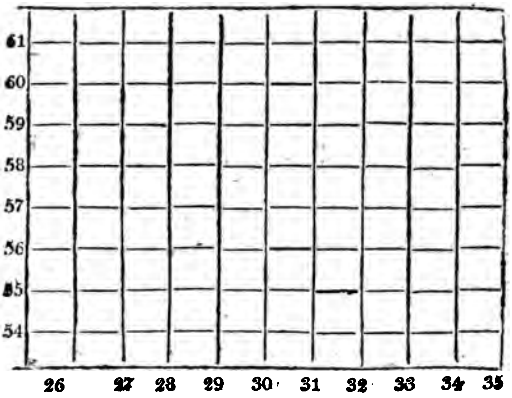


Suppose the point in this square to represent *Madeira*. This point is about one-fifth of the whole, therefore, it is in 2° of longitude, and a little less than one-fifth of the whole 10° of latitude, we see then 32°½ of latitude, and 2° of longitude; there is not an error of ¼ of a degree.

To ascertain the relative situation of towns, some association must be formed between the towns and cities found in any one square. If a sort of narrative be invented, the memory will be materially assisted. We will take 25 for an example: in this are many towns, as Madrid, Barcelona, Bourdeaux, Rochelle, Brest, Rouen, and Paris. The symbol for 25 is Sancho Panza. Sancho then must set out on his travels; he departs from *Madrid,* and arrives at *Barcelona,* where he has to call for some *parcels* (Barcelona); he then goes to Bourdeaux, and is very fond of drinking a bumper of good *Bourdeaux wine;* thence he travels to *Rochelle,* where he rests on a *rock:* being *pressed* for time at *Brest,* he departs for *Rouen;* and by *rowing* down the *Seine,* arrives at last at *Paris.* To remove the apparent difficulty of fixing the names of so many squares, it must be observed that, the greater proportion of them is occupied by sea, where, of course, there is nothing to fix. It may also be supposed, that as there are no less than eight *elevens,* there will be much confusion in remembering the name of any particular place. An association has already been formed for the *eleven* in the first wall. In the *eleven* in the second wall is *Ceylon:* it is not likely that we shall ever commit so great an error as to place Ceylon on our first wall, or Sierra Leone, or Goree, on the second. The *locality* of each is so permanently fixed as to defy any thing like confusion.

Sect. 3.—Particular Geography.

In *particular* charts the divisions are different from those in *general* charts; being divided into much smaller parts.



The above is a chart with a series of figures. The figures which run along the bottom of this chart are the degrees of longitude; those which run up the sides are the degrees of latitude. The Latitude must be counted North or South of the Equator, and the Longitude, East or West of the first meridian. There is here a series of ladders and steps, but very differently numbered from those which have been seen before. The square in longitude 29°, and latitude 55°, if brought together will make 2955; the tens must be rejected, and the units only left. We know that the squares in longitude, from 20 to 30, are on the third ladder, and from 30 to 40 on the fourth; and that the latitude begins on the sixth ladder step. To remember this, some word must be formed from the two figures. Having cut off the tens, we find 2955 becomes 9 longitude, and 5 latitude. The minutes are next to be determined. The distance from line to line is 60 minutes, one half will of course be 30 minutes; $\frac{1}{4}$—15; $\frac{3}{4}$—45; $\frac{1}{5}$—12; $\frac{1}{12}$—5. When the geography of *England* is to be learned, we should commence from the bottom or South of the map, as England is above the equator: when any country is beneath the equator, we must of course count downwards. Although the floor is not used in geography, it will be convenient to suppose this chart of England placed upon the floor, that the different counties may be arranged in order; or it may be supposed to be on a table, &c. or on any other object.

England is generally divided into Circuits, each of which contains a certain number of counties.

Circuits in England and Wales.

	I	II	III	IV	V	VI	VII	VIII
COUNTIES.	1	—	—	—	—	—	—	—
	2	—	—	—	—	—	—	—
	3	—	—	—	—	—	—	—
	4	—	—	—	—	—	—	—
	5	—	—	—	—	—	—	—
	6	—	—	—	—	—	—	—
				—	—			
					—			
					—			

The usual division of the Counties is into *Home Circuits*, etc. etc. but this will not be adopted here. The following is our arrangement of them.

I. *South East.* Sussex, Hertfordshire, Kent, Middlesex, Essex, Surrey.

II. *South West.* Hampshire, Wiltshire, Dorsetshire, Somersetshire, Devonshire, Cornwall.

III. *East.* Suffolk, Norfolk, Cambridgeshire, Bedfordshire, Huntingdonshire, Buckinghamshire.

IV. *West.* Berkshire, Oxfordshire, Gloucestershire, Worcestershire, Monmouthshire, Herefordshire, Shropshire.

V. *Midland.* Northamptonshire, Rutlandshire, Lincolnshire, Leicestershire, Nottinghamshire, Warwickshire, Derbyshire, Staffordshire, Cheshire.

VI. *North.* Yorkshire, Durham, Northumberland, Lancashire, Westmoreland, Cumberland.

VII. *North Wales.* Montgomeryshire, Denbighshire, Flintshire, Merionethshire, Caernarvonshire, Anglesea.

VIII. *South Wales.* Glamorganshire, Brecknockshire, Radnorshire, Caermarthenshire, Cardiganshire, Pembrokeshire.

All these Circuits are numbered in a series as ladders, and the counties are the steps; therefore 4,4 will be 4th circuit, 4th county, and so of the rest. The symbol of 44 is a pianoforte; if it be said that the keys of the instrument are bound with *worsted,* Worcestershire will be immediately brought to our recollection. In the same manner we must proceed with the others, fixing each on a symbol, and connecting some strange and ludicrous idea with this symbol.

The student should be prepared with a small map of England which is not coloured; and colour the *circuits,* each with a separate colour, The first, for instance, blue; the second, yellow; the third, green; the fourth, red; the fifth, lilac; and when he comes to the sixth, begin again. When this is done, it must be remembered that the numerical order of the Circuits is represented by the different colours. The first colour will be blue, the second yellow.

When the counties are numbered, the pupil must count upwards, commencing with the lowest. The more effectually to distinguish their numerical order, we use the colours. The first county in the first circuit, must be bordered with blue; the second county with yellow; the third with green, etc. and the like with the other remaining counties in the circuit. The numerical order of the counties will thus be firmly impressed on the memory.

France contains one hundred and ten departments. These are to be divided into eleven *Regions,* containing ten departments in each. The regions should be arranged in geographical order, commencing from the equator, and counting upwards. The meridian is taken from Paris. West of this meridian we commence with O, the region of the Pyrenees. On the East is I the Region of the Meditterranean, II of Piedmont, III of Charente, IV of Lake Leman, V Central Region, VI Finisterre, VII Region of Jurat, VIII of the Seine, IX of the Rhone, X northern Region.

If we wish to know the thirty-fifth department, it will be found in the third region, fifth department. To distinguish the region there are five colours; one colour serves for I and VI, a second for II and VII, a third for III and VIII. In the same manner one department is distinguished from another.

Sect. 4.—*Statistics.*

It has been shewn that by the aid of the first principles of this science, it will not be difficult to find the situation of kingdoms, provinces, etc. and their respective longitude and latitude. There are, however, many other particulars which it is important to remember, as the number of inhabitants, the natural products, the military power, the extent in square miles, the form of government, the state of commerce, of the arts, etc. etc. These may be all fixed in the memory with equal facility. Suppose that there is before us, a table, and that all the kingdoms of Europe, are placed upon it, and arranged according to their relative importance. This is shewn in the following statistical table.

Statistical Table.

	I England.	II Spain.	III France.	IV Sweden.	V Denmark.	VI	VII	VIII	IX	X
Population.										
Natural Prod.										
Military Power.										
Extent in sq. M.										
Government.										
State of Com.										
Arts and Manuf.										
Sciences.										

The first symbol being the *Tower of Babel*, it must be connected, in some manner, with the kingdom, which is placed first. This is *England*. The Tower of Babel was the cause of the confusion of languages: in England are heard many different languages. Spain shall be II. The symbol for 2 is a Swan; a swan then is placed in the sea, between Spain and England, and it will swim to England to convey intelligence. III is France, and is represented by the mountain, or Parnassus;—the Muses are banished from France. IV is Sweden, represented by a Looking-glass, which may be emblematic of the smooth surface of the Baltic Sea, when calm, and at rest. By such comparisons as these it will be easy to fix any thing that may be required. It now remains to mention the objects in the particular squares or places.

1. *Population.* The symbol for this square is the *Tower of Babel.* From the top of a tower, some idea may be formed of the population of a city, by the number of people walking in the streets.

2. *Natural products.* This square is represented by the swan. A swan is an animal. Animals may be reckoned among the natural products of a country.

3. *Military power.* A fortification may be supposed to be on a *mountain;* and, as this is

the symbol for 3, the *military* power will immediately occur to us.

4. *Extent in square miles.* The looking-glass, which represents 4, will by its four-square figure, call to mind the square miles.

5. *Government.* It will not be difficult to connect the idea of a *throne*, with that of government, whether it be monarchial, republican, or any other form of government. A *throne* is the symbol for 5.

6. *State of commerce.* Commerce, the source of plenty, may well be represented by the *Horn of Plenty*, the symbol for 6.

7. *Arts and Manufactures.* To remember these it will be only necessary to think of the *Glass-blower*, the symbol for 7.

8. *The Sciences.* The symbol for 8, *Midas*, or the man with long ears, is capacitated for the reception of all branches of science.

There is here again a series of ladders and ladder-steps, which must be denominated by their respective numbers. In the number 2,4 there is 2 for Spain, and 4 for the extent in square miles, or the second ladder, fourth step: 4,6 is the Commerce of Sweden; fourth ladder, sixth step.

In the *statistical table* may be placed every particular that it is necessary to know respecting a nation. The manner of application for each square is now considered.

1. *Population.* This is changing every year; the thousands and hundreds must therefore be omitted, and the *millions* only preserved. The population for England will be the number 1, 1, first ladder, first step: this is represented by the pillars of Hercules. England contains 16 millions of Inhabitants.* This number will be fixed in the memory by changing the figures into a word; *t d* will be the consonants giving the number;—it may be said then, that there is a *Toad* crawling up the pillars of Hercules.

2. *Natural Products.* If a country be remarkable for the excellence of its horses, a rude outline of this animal may be drawn in the square belonging to the natural products. If it contains extensive *salt* mines, a barrel or basket of salt may be placed by the horse; if good wine, two bottles of wine should be added; *iron* may be represented by *bars,* and sheep by an outline, as with the horse. To connect these circumstances together, some narrative should be invented, the more improbable and ludicrous the better. The *horse* being pressed by hunger, eats the *salt,* but becoming thirsty, in conse-

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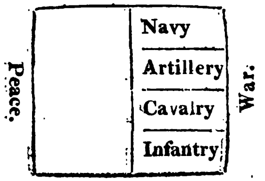
* According to the last Population Returns, 16,552,144

quence, drinks the *wine*; the wine has an effect upon him, he becomes frantic, breaks the bars of iron, and endangers the safety of the sheep. The symbol for 12 is *David with the Lion;* David must hold the horse, and take especial care that the Lion does not devour the sheep.

In the course of our reading, if it be required to commit to memory any remarkable circumstance respecting a country, we should take a sheet of paper and divide it as our table is divided, placing in the appropriate squares a resemblance, or rude outline, of the object or circumstance to be remembered. This mode will assist the memory very materially, and excite a greater degree of attention than the mere idea which is presented to the mind by reading.

3. *Military Power.* The state of the military force, in time of peace as well as of war, must be considered, with the divisions into artillery, cavalry, and infantry; or, any other arrangement may be made which the nature of the military force, in any particular country, may demand. The square may be thus divided:



4. *Extent in Square Miles.* Here we should divide the square into several parts, significant of the face of the country; whether it be cultivated or uncultivated, wood-land, meadow, or pasture, arable, etc. and what may be the extent of water in the country.

5. *Government.* If the government be monarchial, a king may be supposed sitting upon the throne, attended by princes; or, if of the mixed kind, he is supported by Lords and Commons.

6. *Commerce.* In this are arranged the principal exports and imports, and whatever relates to trade in general.

7. *Arts and Manufactures.* Those of England might be represented in many ways. It will be sufficient, perhaps, to place there the *steam-engine* and the *cotton-mill*, and there will be a visible remembrance of the arts and manufactures of our own country.

8. *The Sciences.* To this square belong the principal universities or foundations for the propagation and increase of knowledge, with the various literary and scientific Institutions, as also the philosophers, poets, etc. etc.

This general system of statistics is applicable, of course, to any particular country, and to its various subdivisions. In England, for instance, it might be applied to every *county*, in the same manner, as it is used for the whole *kingdom*.

CHAP. IV.

History.

THE pupil having acquired some knowledge of the details of geography, including statistical tables, and also of the mode of fixing in his memory the chronological succession of sovereigns, will proceed to the study of history with peculiar advantages.

The following arrangement of some dates will introduce us to the application of the mnemonical principles to history.

Room	Stripe	Place
17	8	6
15	2	4
14	6	0
12	0	7
9	7	4
	8	7
		9

There are here units of years, tens of years, or decennials; and hundreds or centuries. As the division into rooms already noticed, will be here resorted to, we cut off the first series of units, and call them *places*; the next which are rejected are named *stripes;* and the remaining figures, *rooms.* For example, 1786, would be seventeenth room, eighth stripe, and sixth place; 1524, fifteenth room, second stripe, and fourth place, and so of the rest. 87 is in O room, or the room of units and tens,* eighth stripe, and seventh place. When we view a choice collection of pictures, some impressions of the excellence of a particular picture, and of its situation in the room or gallery, are generally fixed in the mind. The remembrance of one picture will suggest the situation of another, and in this manner it will not be difficult to fix the places of the more conspicuous paintings: and if there are many rooms, the particular room may be distinguished. Instead of a room being filled with pictures, it is easy to imagine that it is occupied by the events of a whole century: in this room are all the years, reduced to *localities.*

A room is now taken with three walls, (see Plate I. fig. 7.) each of which is divided into three stripes; and each stripe into nine compartments or squares, as we have, in some instances, done on our walls.

Each of these stripes is now a ten; and before the first ten, there is O stripe, which is placed on the floor: on this are put 1, 2, 3, etc. to 9. The number 100 must be placed on the cieling of the *second* room, which should be divided in the same way. This number will also serve as an inscription to designate the room.

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* The second is the room of centuries.

As it will be needful to appropriate a room to each century, there will be occasion for a series of rooms. This series will be thus arranged.

0

1	2	3
4	5	6
7	8	9

Here are the hundreds; and those before 100 are placed in the preceding or O room. There is now a necessity for a *tenth* room. To obviate this inconvenience it will be easy to suppose that the house is a *double house*. Thus we shall be furnished with rooms for 2000 years.

But whence, it will be asked, are so many rooms to be procured? Every one is familiar with the apartments in his own house. All these rooms must be employed, and named, first, seventh, fourth, etc. and it will be better to choose rooms which are supplied with pictures, furniture, or some other remarkable objects, upon which numbers may be fixed. Each room will be distinguished by one of the symbols. The *first* room will have the tower of Babel painted upon it; and to fix this more strongly upon the memory, it may be observed that the proprietor of the room is a great linguist, and the idea of the confusion of languages cannot fail to suggest to us the *Tower of Babel*, the distinguishing symbol of this room.

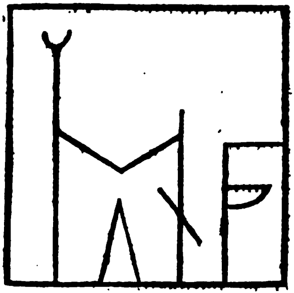
The *second* room will be designated by the *Swan*; the occupant of this room may be much attached to the study of ornithology; he may be fond of birds, and possess an extensive aviary.

The *third* room will have Parnassus or the Mountain; this room may be the habitation of a *poet*, or of one who has a taste for poetry. If there be not a sufficient number of rooms in our own house, some of those belonging to our friends may be engaged, whether they be at London, Edinburgh, or Vienna. Having placed them ideally in order, we are now ready to fix whatever is required to be remembered.

For example, in the history of England it will be found that William the Conqueror began to reign in 1066. This date must be placed in the tenth room, sixth stripe, and sixth place. The tenth room will belong to Goliath, and we shall have associated this idea with the room, by comparing the possessor to Goliath in size and shape, or in character for courage, bravery, or any other similar quality. The second king is *William Rufus*, who ascended the throne in the year 1087 ; he will, of course, be placed in the same room, on the eighth stripe, and seventh place, and the whole of the stripes and places between this and the former, may be devoted to William the Conqueror.

Charlemagne, who was crowned Emperor in the year 800, is, naturally, placed on the cieling of the eighth room,—the room belonging to Midas. With Charlemagne may be arranged Egbert, or any king of another country whose reign was coeval with that of Charlemagne.

When the present historical arrangement has become familiar, it will be proper to take a sheet of paper for every century, forming a room and making the proper divisions of three walls and a floor, as above described. A particular fact may be then put upon paper, by sketching a rude outline of the circumstances, by figures of animate or inanimate beings; this, though it may appear to some unnecessary, will imprint the different facts upon the memory more forcibly than the usual mode of committing them to writing. This will be sufficiently exemplified by the following hieroglyphic ;



It is thus explained. A convention was entered into in Egypt, between *General Kleber*, on the part of the French, and the *Grand Vizier*, on the part of the Sublime Porte, which was approved by the Cabinet of London. The straight line with the crescent on its top denotes the Grand Vizier, by its superior height to the perpendicular line which is to represent General Kleber; the line drawn through the centre of this line forming 2 acute angles, is intended for the General's sword. To denote the convention two lines are drawn, which meet together in the centre, and represent the shaking of hands, or a meeting. The convention was formed in Egypt, which is signified by a pyramid. The Cabinet of London is typified by the outline of a cabinet on the right of the diagram; the head of a ship placed in the square denotes London, as it is frequented more than any other port by ships.

It is not to be supposed that each division will become more difficult in proportion as it is filled with events. The reverse indeed will be the case. It is a much greater labor to retain a few facts scattered throughout the different squares, than it is to remember a multiplicity of them, each being arranged in order. If we take a few insulated facts, there can be but little connexion between them; but when there is a multiplicity of events disposed in order, by associating them together, the one assists the remembrance of the other, and a strong connecting chain is formed, the links of which can scarcely be broken. The facility of committing these facts to memory is increased by their number. In selecting the facts we should be careful to take the simple facts; and not to mistake their connecting circumstances, or consequences, for the facts themselves.

It may be asked, perhaps, is there not occasion for a different room for every country? Certainly not. The history of one country must never be separated from the history of another country. We can scarcely speak of an event of very great political importance which has happened in England, without involving the history of most of the European States, of the East Indies, etc. etc. The political interests of one country are almost always united with those of another country. Sometimes, the events of one nation are of high importance; sometimes those of another nation. The gradual progress of a nation to power, and the gradual decline and extinction of that power must be familiar to every one who is, in the slightest degree, acquainted with history. The wheel of power, like the fabled wheel of fortune, is continually revolving; and, as one nation, in one century, takes the lead in importance and influence; the next views it sunk into insignificance, and consequently, very unproductive of peculiar or striking events.

Some, however, may object, that we shall not be able to distinguish any particular event, so as to assign this event to its proper country. There can be, however, no fear of this. Some particular circumstances connected with, and inseparable from, the fact itself, cannot fail to distinguish the country in which this event happened, whether in England, France, Spain, Germany, or any other part of the world.

Hitherto that period of time only has been considered which is posterior to the Birth of Christ. Antecedently to this period, however, there is a space of four thousand and four years. This time, though embracing a large number of years, is by no means so pregnant with events as that after the Birth of Christ.

Plate I. fig. 8. represents the series of centuries, and on the left of this series are placed the events that happened from the creation to the Birth of Christ.

It would be easy to assign to each year its proper place; but the first 3000 years are so barren of events, that it would be useless to do so; and the difficulty of remembrance would be enhanced by the paucity of dates worthy of being committed to memory. We ought not to take rooms where there is nothing to fix. It is only necessary to know the true series of facts; the years must be put into words. There are but four years before the four thousandth year. In these the Creation, and the birth of Cain and Abel, are the principal events. From 4000 to 1000 there are not more than thirty principal facts. If there were 300, not more than three rooms would be required. The period which includes the histories of Greece and Rome, will produce a greater number of facts; and there will be more certainty as to the dates. From the building of Rome then to the Birth of Christ, there will be occasion for seven rooms. (See Plate I. fig. 9.)

These remarks will suffice for the antient and modern history,—for the antediluvian and postdiluvian periods. We may, however, wish to remember not only the principal facts in general history, but to enchain and fix the fleeting visions of the moment,—those passing incidents which interest, amuse, or instruct us. "The sacred treasure of the *past*," is not the only "substantial shadow," which will be registered in our ideal repository. We shall be enabled to arrange *future events*, and thus have an orderly disposition of every circumstance of business or pleasure, in which we may be engaged. In this repository may be placed passing events, those already entombed in the grave of time, and those which are yet to seek the same sepulchre. Our *ideal almanack* will enable us not only to register appointments—but to enrol the payment of bills and other mercantile concerns. To the *diarist* it will be a neverfailing source of profitable instruction and amusement.

To fix the events of a whole year more places are required. Our year is divided into months, weeks, and days; and into four seasons. Every room has four sides. Every season contains three months, and each wall contains three stripes. (See Plate I. fig. 10.) The months are named first, second, third, fourth, and so on; on each stripe are the days of the month, and consequently a sufficient number of squares or places, in which the facts and events may be arranged. To remember the first, second, and third months, the figures may be changed into letters, and the letters into words, if necessary. If it be required to commit to memory some remarkable circumstance which happened on the 25th of June, we should take the figures 6,25 (sixth month, 25th day,) and change them into letters; these would be *d n l*; of this we might make *Daniel*, or any other word that would associate better with the nature of the event. If it be 6,8 (June 8th) we might say *d v* (dove) and connect it with the leading feature of the event.

The advantage of resorting to symbols for the representation of sensible objects, has, already been insisted upon: it must, however, be repeated, that the rude outline of any one object, if drawn upon the paper, will contribute more essentially to imprint the circumstance upon the memory, than whole pages of laboured description and minute detail. The Egyptian hieroglyphics were formed in this way, and the key to their interpretation (the combination of the different images) was a sacred trust reposited with the priests. The symbols which may be formed will serve the purpose of secret writing: for we may be well assured that they will be as unintelligible to every one but ourselves, as the priest-writing was, to the *profanum vulgus* of Egypt.

CHAP. V.

Language.

Sect. 1.—*On learning Languages.*

THE learning of Languages is, in these days, an object of such general pursuit, and at the same time of such real importance, that every plan of instruction which has for its object to abridge the labour of this study, or to give permanence to its acquisitions, comes to our consideration with the strongest claims on our attention. The first approach to the study of Languages presents to view a long and dreary passage, but which must be travelled through with care and diligence, by those who wish to make any useful progress. Now it would certainly be a great advantage to turn and shorten this toilsome road, and be enabled to pursue our journey through the regions of science by more direct and less fatiguing advances.

That any course of learning should be devised by which the acquisition of Languages shall be rendered an expeditious and unlaborious task, it would be presumptuous to expect. But it may be reasonably hoped, that, in the progressive improvement of human experience, new methods of instruction may be introduced, in this as well as in other sciences, which may afford additional facilities to learning, and clear away many obstacles to improvement which former ages were unable to remove.

It is quite obvious that the difficulty in acquiring a foreign language consists in the *constitutional difference* of our native tongue, and that which we propose to learn. If the grammatical properties of the two languages were similar, the mere obtaining of a *copia verborum* would be an undertaking of no great difficulty. But how considerable a labour it is to obtain a perfect knowledge even of the genders and declensions of nouns, the conjugation of verbs, and other matters which are the very *initials* of language, any one who has had the least experience of the drudgery of teaching can well testify.

It would seem, then, that one of the most extensive facilities which can be afforded in this matter, is to point out the affinities of different languages—to systematise, as far as can be, their similarities; and, where it is practicable, to trace and notify their variances. In other words, if the expression may be allowed, to exhibit the *universalities* of language.

Something of this nature will be attempted in the present chapter. It is inserted, because it constitutes a part of M. Von Feinaigle's instructions; and because the Editor hopes that, it will be found to contain some useful matter. But he does not mean to delude the reader into an expectation that he will be here provided with a sort of talismanic key, which shall enable him, without labour and without loss of time, to unlock the *janua linguarum*. Indeed that (whatever some interested enthusiasts may pretend) is what no intelligent reader would expect, nor any honest man venture to promise. All that will be here attempted will be, to exhibit some of the most important similarities of different languages—to show that, notwithstanding individual peculiarities, they still retain strong marks of affinity in many essential particulars.

> Facies non omnibus una,
> Nec tamen diversa; qualem decet esse sororum.
> *Ov. Met. l.* 2. *v.* 13.

And, to bring the matter more home to practice, to offer some rules, by the assistance of which one language may be usefully applied to the acquisition of another.

As we are about to consider some of the universal properties of language, it may not, perhaps, be thought improper to enter on the subject with a slight sketch of the origin of language.

Sect. 2.—Sketch of the Origin of Language.

" We are informed by Scripture, that when the building of Babel was begun, about eighteen hundred years after the fall, the whole earth was of *one speech*. And had no miraculous interposition taken place, it is probable, that some traces of it would have remained in every language to this day. For, though, in so long a time, many words must have been changed, many introduced, and many forgotten, in every country, yet men being all of the same family, and all deriving their speech from the only one primitive tongue, it may be presumed that some of the original words would still have been in use throughout the whole earth : even as in all the modern languages of Europe, some Greek, and some Hebrew, and a great deal of Latin, is still discernible. But Providence thought fit to prevent this ; and by confounding the language of the builders of Babel, to establish in the world a variety of primitive tongues.

* * * *

" Languages are either Primitive or Derived.

That those which are formed out of the same parent tongue should all resemble it and one another, and yet should all be different, is not more wonderful, than that children and their parents should be marked with a general family likeness, and each distinguished by peculiar features. Spanish, Italian, Portuguese, French, and a great deal of the English Tongue, are derived from the Latin; with the addition of many new words, and new modes of termination and syntax which were introduced by the northern nations. And, therefore, all these languages resemble the Latin and one another; and yet each is different from it, and from all the rest. But, if we could compare two original or primitive tongues together, the Hebrew for instance, with the Gothick or the Celtick, or the language of China, with that of the Hurons in North America, we should not discern, perhaps, the least similitude: which, considering that all mankind are of the same family, could not be fully accounted for without supposing, that some preternatural events like that at the confusion of Babel, had some time or other taken place. But this history solves all difficulties."*

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* Beattie on Language, in his Dissertations, pp. 304—206, 4°.

This is the general opinion respecting the origin of the diversity of Languages; but it is not an uncontroverted doctrine. DR. PRIESTLEY* has argued upon this point in the following manner:—

"The present diversity of language is generally believed to have taken its rise from the building of *Babel*, and to have been brought about by the interposition of the Divine Being; but it is no impiety to suppose, that this (agreeable to most other operations of the Deity) might have been brought about by natural means. The possibility of this natural deviation seems to be deduced from the following considerations.

"*First*. The primitive language, or that which was spoken by the first family of the human race, must have been very scanty, and insufficient for the purposes of their descendants, in their growing acquaintance with the world.

"*Secondly*. Not being fixed by the practice of writing, it would be very liable to variation.

"*Thirdly*. Supposing the primitive language to have had few inflections, (because few would have been sufficient,) it would easily admit any inflections, which chance or design might suggest to the founders of different families, or to their successors. These different inflections would consequently introduce different constructions of words, and different rules of syntax: and thus what are called the very *stamina* of languages, would be formed independently of one another, and admit of all possible varieties.

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* Lecture on the Theory of Language, p. 287, and seq.

" *Fourthly*. Considering into what different climates mankind were dispersed, furnished with the bare rudiments of the art of speech, into what different ways of living they fell, and how long they continued without the art of writing, (without which no language can be fixed,) it seems to be no wonder that languages should be so different as they are; both with respect to the rules of inflection, with the fundamentals of grammar which depend upon them, and the words of which they consist.

" The difficulty which some allege there is, in conceiving how languages should arise in the world so very different, not only in the words, but in the manner of using them, seems to arise wholly from the supposition, that the primitive language was copious, regular, and perfect in all its parts: the difficulty of changing such a language is allowed; but the fact, is apprehended, is much easier accounted for upon the present hypothesis.

" To these arguments it may be added, that to a person thoroughly acquainted with the present state of mankind, the prodigious diversity of human manners and customs may probably appear almost as difficult to be accounted for, as the diversity of languages only."

The late DR. G. GREGORY has observed on this subject, that it is impossible to say what was the nature of the confusion of language at *Babel;* whether it consisted in the invention of new terms, or in the improper use of the old. The miracle at *Babel,* he adds, might be only a temporary confusion,* sufficient to set aside that useless and absurd undertaking: and it is more natural to suppose, that the consequent dispersion of mankind was the effect of dissentions occasioned by having misunderstood each other, than that they could not live together, because they did not all continue to speak the same language.

II. The origin of *alphabetical writing* is involved in as much doubt as that of the diversity of language; and the controversies which have arisen on both subjects have been similarly conducted—one side pretending to found their arguments on the authority of the Scriptures, and the other side denying that those records furnish any such inference.

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* This conjecture, as DR. GREGORY states in a note, is confirmed by a criticism of Mr. Bryant, who remarks, in his analysis of Ancient Mythology, that שפה really signifies *lip,* and that consequently the miracle was not any alteration in the language, but a failure or incapacity in labial utterance, which, soon after their separation, they recovered.

They who have recourse to supernatural interposition to account for the origin of writing, allege that the first alphabetical writings were the two tables of stone, which, as we are informed by Moses, were written by the finger of God himself. And it must be acknowledged (in the words of Dr. Priestley) that the oldest account we have concerning the use of letters in Asia and Greece is so circumstanced, as by no means to clash with this hypothesis. It seems likewise very probable from Robertson's comparison of Alphabets, that all the known ones might originally have been derived from the Hebrew, or Samaritan.

But in opposition to these arguments, it has been asked—If the Deity had taught or revealed such an art to mankind, why is it not explicitly noted in that complete history of revelation, which inspiration has handed down to us? The writing on the tables at *Mount Sinai* is not spoken of as a new invention; and if it had been such, and particularly if it had been the immediate act of the Deity, is there the least probability that so important a fact would have been omitted by the sacred historian? There are various other arguments in this matter, but these form the hinge of the dispute; and we shall close this subject with a very satisfactory observation of Dr. Priestley, who remarks, that, the imperfections of all alphabets, the *Hebrew* by no means excepted, seems to argue them not to have been the product of divine skill, but the result of such a concurrence of accident and gradual improvement as all human arts, and what we call inventions, owe their birth to. For certainly, the alphabets in use bear no marks of the regularity and perfection of the works of nature: the more we consider the latter, the more reason we see to admire their beauty, just proportions, and consequent fitness to answer their respective ends; whereas, the more we examine the former, the more defects, superfluities, and imperfections of all kinds we discover in them. Besides, had there ever been a divine alphabet, it would certainly have established itself in the world by its manifest excellence, particularly as, upon this supposition, mankind were incapable of devising one themselves.

III. But whatever may be the origin of *alphabetical writing*, it is certain that all alphabets are, more or less, defective. In the orthography of modern languages, in particular, it is a great inconvenience, as has been truly observed,* that the pronunciation does not correspond with the writing; but that the same letters have different sounds, and the same sounds are often represented by different letters; some letters also, according to the pronunciation, are superfluous in some words, in others letters are wanting. This is chiefly a mark of their derivation from other languages: since, in many of those differences, the spelling leans to the antients, when the pronunciation is modern. Thus the *(p)* in the word *receipt* is not pronounced; but it shows the derivation of the word from *recipio* in Latin. Some words of the same sound are spelled differently, to preserve a distinction in writing, as *air heir: hair heir,* etc. Other words, on the contrary, which are spelled in the same manner, are pronounced differently, to preserve a distinction in speaking; as I *read,* and I have *read.*

Sect. 3.—*Account of some attempts towards forming a universal Character or Alphabet.*

All the alphabets extant are charged by BISHOP WILKINS with great irregularities, with respect both to order, number, power, figure, &c.

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* Priestley's Lectures on Language, p. 43.

As to the *order* it appears, says he, inartificial, precarious, and confused, as the vowels and consonants are not reduced into classes, with such order of precedence and subsequence as their natures will bear. Of this imperfection the Greek alphabet, which is one of the least defective, is far from being free: for instance, the Greeks should have separated the consonants from the vowels; after the vowels they should have placed the diphthongs, and then the consonants; whereas, in fact, the order is so perverted, that we find the *ο* the fifteenth letter in the order of the alphabet, and the *ω*, or long *o*, the twenty fourth and last: the *ε* the fifth, and the *η* the seventh letter.

With respect to *number*, they are both redundant and deficient; redundant by allotting the same sound to several letters, as in the Latin *c* and *k*, *f* and *ph*; or by reckoning double letters among the simple elements of speech, as in the Greek *ξ* and *ψ*, the Latin *q* or *cu*, *x* or *ex*, and the *j* consonant. They are *deficient* in many respects, particularly with regard to vowels, of which seven or eight kinds are commonly used, though the Latin alphabet takes notice only of five. Add to this, that the difference among them with regard to long and short, is not sufficiently provided against.

The *powers* again are not more exempt from confusion; the vowels, for instance, are generally acknowledged to have each of them several different sounds; and among the consonants we need only bring as evidence of their different pronunciation the letter *c* in the word *circa*, and *g* in the word *negligence*. Hence it happens, that some words are differently written, though pronounced in the same manner, as *cessio* and *sessio*; and others are different in pronunciation, which are the same in writing, as *give*, *dare*, and *give*, *vinculum*.

Finally, he adds, the *figures* are but ill concerted, there is nothing in the characters of the vowels answerable to the different manner of pronunciation; nor in the consonants analogous to their agreements, or disagreements.

As we are on this subject, the reader may not be displeased, perhaps, to have the various schemes which have been proposed for the emendation and correction of the English Alphabet brought together in one concise view.

"There have been many schemes offered for the emendation and settlement of our orthography; which, like that of other nations, being formed by chance, or according to the fancy of the earliest writers in rude ages, was at first very various and uncertain, and is yet sufficiently irregular: of these reformers some have endeavoured to accommodate orthography better to the pronunciation, without considering that this is to measure by a shadow; to take that for a model or standard, which is changing while they apply it. Others, less absurdly indeed, but with equal unlikelihood of success have endeavoured to proportion the number of letters to that of sounds, that every sound may have its own character, and every character a single sound. Such would be the orthography of a new language to be formed by a synod of grammarians upon principles of science. But who can hope to prevail on nations to change their practice, and make all the old books useless? or what advantage would a new orthography procure equivalent to the confusion and perplexity of such an alteration.

"One of the first who proposed a scheme of regular orthography, was SIR THOMAS SMITH, Secretary of State to Queen Elizabeth, a man of real learning, and much practised in grammatical disquisitions.* After him another mode of writing was offered by DR. GILL, the celebrated Master of St. Paul's School in London. Dr. Gill was followed by CHARLES BUTLER, a man who did not want an understanding, which might have qualified him for better employment. He seems to have been more sanguine than his predecessors, for he printed his book according to his own scheme.

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* In the preface to Dr. Johnson's English Dictionary (from which this account is extracted) a specimen may be seen of his reformed orthography. The want of proper types, however, renders it impossible to exhibit this and other specimens here.

"In the time of CHARLES I, there was a very prevalent inclination to change the orthography; as appears, among other books, in such editions of the works of Milton as were published by himself. Of these reformers every man had his own scheme; but they agreed in one general design of accommodating the letters to the pronunciation, by ejecting such as they thought superfluous. Some of them would have written these lines thus:

All the erth
Shall then be paradis, far happier place
Than this of Eden, and far happier dais.

"BISHOP WILKINS afterwards, in his great work of the philosophical language, proposed, without expecting to be followed, a regular orthography; by which the Lord's prayer is to be written thus:

Yȣr Fádher hȣitsh art in héven, h*a*lloed bi dhyi n*a*m, dhi cingdym cym, dhy ȣill bi dyn in erth as it is in héven, etc."

" Here DR. JOHNSON has closed his account, which we shall endeavour to complete by noticing some other philosophical speculations of a similar nature that have been submitted to the public. But we shall first present the reader with a more detailed account of Bishop Wilkins' plan of a universal and philosophical language. This account we shall give in an extract from DR. PRIESTLEY'S Lectures on the Theory of Language, because it contains the most clear and concise exposition of it, that can possibly be given.

" Having in the first place, with prodigious labour and exactness, distributed all things to which names are given into classes; under forty genuses or general heads, (some of which, however, are subordinate to others) he assigns a short and simple character to each of these forty genuses,—a definite variation of the character, to each difference under the genuses, and a further variation for each species, etc. By this means, the characters, representing all things that have names, have the same analogies with one another that the things themselves have.

" Characters being provided for the names of things, the grammatical distinctions of words, *numbers, tenses, persons, voices,* etc. are denoted by some appendage to the character.

" In this manner may we be furnished with an universal character, which shall represent ideas directly, without the intervention of any sounds, and which may be equally understood by people using any language whatever.*

" To make this character effable, the Doctor (Wilkins) appropriates a single sound to the characters representing each genus and difference, and also to each variation and appendage before mentioned: and they are so contrived, that the simple sounds adapted to all the parts of the most complex character may be pronounced with ease, as one word.

" By this means any people, after they had applied this character to represent their ideas, might soon learn to read it in the same manner as any other people; whereby, in conversation as well as in writing, they might make themselves perfectly understood by one another.

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* The languages of Europe have one instance of this kind of writing. Their *arithmetical figures*, which were derived from the Arabians, are significant marks precisely of the same nature as the universal characters above mentioned. They have no dependance on words; but each figure represents an object—represents the number for which it stands: and accordingly, on being presented to the eye, is equally understood by all the nations, who have agreed in the use of those cyphers—by Italians, Spaniards, French, and English, however different the languages of those nations are from one another, and whatever different names they give in their respective languages, to each numerical cypher.—*Blair on the Belles Lett. Lect.* vii.

"The elements of this character and language are so few, and the combination of them so easy, that the Doctor (Wilkins) says he has no doubt, that a person of a good capacity and memory may, in one month's space, attain to a good readiness of expressing his mind this way, either in the character or language.

"As the names of individuals cannot be comprehended in tables of genuses and their differences, the Doctor (Wilkins) hath contrived an ALPHABET of all the simple articulations of the human voice; to which he hath assigned two sets of characters, to be used at pleasure: the one consists of short and plain strokes, the other is a kind of delineation of the position of the organs in forming the articulations."

This plan Dr. Priestley considers the most rational of all the plans of a universal and philosophical language. And he adds, whenever this noble project is resumed, it seems to be impossible to proceed upon a better plan than this. The principal thing that is wanting to the perfection of it is a more perfect distribution of things into classes than, perhaps, the present state of knowledge can enable us to make.

Mr. Lodwick, in the *Philosophical Transactions,*[*] gives 'an Essay towards an universal Alphabet.' His plan was to contain an enumeration of all such single sounds, as are used in any language: by means of which people should be able to pronounce truly and readily any language; to describe the pronunciation of any language that shall be pronounced in their hearing, so as others accustomed to this language, though they had never heard the language pronounced, shall at first be able truly to pronounce it: and lastly, this character was to serve to perpetuate the sounds of any language whatever.

The construction of "a new alphabet, and a reformed mode of spelling," has also occupied the attention of that celebrated Philosopher, Dr. Franklin. His plan may be seen in his miscellaneous works.[†] In this alphabet he has attempted to provide that no letter should have two sounds, and every sound should be represented by a distinct letter. "It is to be observed, (he says) that in all the letters, vowels, and consonants, wherever they are met with, or in whatever company, their sound is always the same.

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[*] Vol. xvi. p. 126.

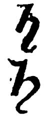
[†] Vol. ii. p. 357. ed. Lond. 1806.

It is also intended, that there be no *superfluous* letters used in spelling; i. e. no letter that is not sounded; and this alphabet, by six new letters, provides that there be no distinct sounds in the language, *without letters* to express them. As to the difference between *short* and *long* vowels, it is naturally expressed by a single vowel, where short; a double one, where long; as for *mend*, write *mend;* but for *remained*, write *remeen'd;* for *did* write *did*, but for *deed* write *diid*, etc."

In this alphabet *c* is omitted as unnecessary; *k* supplying its hard sound, and *s* the soft; *k* also supplies well the place of *z*, and with an *s* added, the place of *x: q* and *x* are therefore omitted. The vowel *u*, being sounded as *oo*, makes the *w* unnecessary. The *y*, where used simply, is supplied by *i*, and where as a diphthong, by two vowels: that letter is therefore omitted as useless. The jod, *j*, is also omitted, its sound being supplied by a new letter, which serves other purposes.

The philosophical construction of the alphabet may be best seen in the following account, written by himself, and entitled:

"REMARKS *on the alphabetical Table.*"

o to *huh*	It is endeavoured to give the alphabet *a more natural order;* beginning first with the simple sounds formed by the breath, with none or very little help of tongue, teeth, and lips, and produced chiefly in the windpipe.
g. k.	Then coming forward to those formed by the roof of the tongue next to the windpipe.
r. n. *t. d.*	Then to those, formed more forward, by the forepart of the tongue, against the roof of the mouth.
l. *s. z.*	Then those formed still more forward in the mouth, by the tip of the tongue, applied first to the roots of the upper teeth.
	Then to those formed by the tip of the tongue, applied to the ends or edges of the upper teeth.
f. v.	Then to those formed still more forward, by the under lip applied to the upper teeth.
b. *p.*	Then to those formed yet more forward, by the upper and under lip opening to let out the sounding breath.
m.	And lastly, ending with the shutting up of the mouth, or closing the lips while any vowel is sounding.

It is impossible for want of proper types to give a specimen here of the Doctor's reformed mode of spelling; but several examples may be seen in the 3rd vol. of his works, p. 357, in which is inserted a correspondence which was carried on between the Doctor and Miss Stephenson, on this subject, and in which the former urges the utility of his scheme, and endeavours to answer the objections raised against it."*

Mr. NOAH WEBSTER, another American author, has proposed a more moderate innovation, "to render our orthography sufficiently regular and easy."

1. The omission of all superfluous or silent letters. Thus *bread, head, give, breast, built, meant, realm, friend,* would be spelt, *bred, hed, giv, brest, bilt, ment, relm, frend.*

2. A substitution of a character that has a certain definite sound, for one that is more vague and indeterminate. Thus, *mean, near, speak, grieve, zeal,* would become, *meen, neer, speek, greeve, zeel.* Thus *key* should be written *kee; laugh, laf; daughter, dawter; blood, blud; character, karacter; chorus, korus,* etc.

3. A trifling alteration in a character, or the addition of a point would distinguish different sounds, without the substitution of a new cha-

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[*] Mr. WEBSTER states, that the Doctor, amidst all his other employments, public and private, actually compiled a Dictionary on this scheme of reform, and procured types to be cast for printing it. But it never was printed.

racter. Thus a very small stroke across *th* would distinguish its two sounds. A point over a vowel might answer all the purposes of different letters. And for the diphthong *ou*, let the two letters be united by a small stroke, or both engraven on the same piece of metal, with the left hand line of the *u* united to the *o*.

These, with a few other inconsiderable alterations, Mr. Webster thinks, " would answer every purpose, and render the orthography sufficiently correct and regular."*

The only other scheme of reformation we shall notice is that put forth by Mr. ELPHINSTON. We shall transcribe the first paragraph of his preface.†

" Evvery tung iz independant ov evvery oddher. Hooevver seeks dhe anallogy (or nattural rule) ov anny tung, must dherfore find it at home; nor wil dhe seeker seek in vain. Inglish diccion dhen haz no laws, but her own. Yet, in her picturage, and consequently in much ov her livving practice; hav anny oddher laws, or any lawlesnes, been prefferably regarded. No more can anny language adopt dhe system ov any oddher; dhan anny nacion, dhe hoal pollity ov anoddher nacion: for such adopter wer no more a distinct nacion or language; wer but a mongrel, or an eccoe."

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* Dissertations on the English Language, p. 394.

† Propriety ascertained in her Picture, 4o.

Sect. 4.—Proposed Philosophical Arrangement of the Alphabet as applied to Language in general.

The ordinary arrangement of the alphabet being thus defective and unphilosophical, we shall propose another mode of disposing the letters, which we shall endeavour to justify, by assigning a reason for allotting to each letter the particular place which it occupies. We shall exhibit our alphabet, then, in this form:—

a	b	c	d
e	ph f	ch g	t h
i j	k l	m	n
o	p	q r	s t
u	v	x	y z

According to this scheme, the letters are distributed into four columns, each column containing five letters. This arrangement is not an arbitrary one, but is made upon principles of philosophical propriety.

The first column contains the vowels. *Y*, is a vowel in English, but it is by no means an essential part of the alphabet. It takes in general the sound of *i*, as in *rhyme, cyder, system, syntax,* etc. For this reason (as Mr. Walker has observed) printers, who have been the great correctors of our orthography, have substituted the *i* in its stead, in many instances. We shall discard *y*, therefore, from our alphabet.

The vowels are placed first, because they can be pronounced without the assistance of consonants, while consonants cannot be pronounced without the aid of vowels. In order to account for the arrangement of the vowels, thus; *a, e, i, o, u;* we must advert to the pronunciation of them. The French pronunciation is the most natural and philosophical; for in the course of that pronunciation of the vowels, there is a regular gradation of sound from the most open to the closest,—from high to low,—*aw, a, ee, o, eu.* This is the order of nature. The sound of *a* is produced by a very wide opening of the lips; which are somewhat more closed in the pronunciation of *e*; and still more so in the utterance of *i*. When *o* is pronounced, the lips approximate still more, and at the sound of *u*, they are almost closed.

This subject may be further illustrated by the following extract from Mr. WALKER's Principles of English Pronunciation prefixed to his

Critical Pronouncing Dictionary. After exhibiting a detailed view of the organic formation of the vowels, not differing materially from that before stated, he remarks that, in this view we find, that, *a*, *e*, and *o*, are the only simple or pure vowels: that *i* is a diphthong, and that *u* is a semi-consonant. If we were inclined (he adds) to contrive a scale for measuring the breadth or narrowness, or, as others term it, the openness or closeness of the vowel, we might begin with *e* open, as Mr. Elphinston calls it, and which he announces to be the closest of all the vocal powers. In the pronunciation of this letter, we find the aperture of the mouth extended on each side; the lips almost closed, and the sound issuing horizontally. The slender *a* in *waste* opens the mouth a little wider. The *a* in *father* opens the mouth still more, without contracting the corners. The German *a*, heard in *wall*, not only opens the mouth wider than the former *a*, but contracts the corners of the mouth, so as to make the aperture approach nearer to a circle; while the *o* opens the mouth still more, and contracts the corners so as to make it the *os rotundum*, a picture of the letter it sounds.

Consonants are divided into different classes according to the seat of their intonation, or from those organs of speech which are chiefly employed in forming them. The distinction which we shall adopt, is that which divides them into labials, gutterals, dentals, and palatals; as they are formed by the lips, the throat, the teeth, or the palate: or, in other words, because the breath, in passing from the lungs, is intercepted in those seats or places, or at least is very strongly compressed there.

In the second column are the consonants, *b*, *f*, *p*, *v*.

B is a labial: it is formed by intercepting the passage of the breath through the mouth, by closing the lips.

F may be represented by *ph*. *Ph* occurs chiefly in words derived from the Greek, and written in that language Φ. The Italians, in such words, write *f*; thus, while we adhering strictly to derivation write *philosopher*, they write *filosofo*.*

P is a labial, formed (like *b*) by closing the lips; but in a less forcible manner. The Arabians (says Mr. Wallis) have not this letter, but substitute for it either *Be* or *Phe*. The illiterate Jews in this country usually confound *b* and *p* in their pronunciation, using the one for the other.

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* Eundem olim (*ph*) sonum habuisse ac *f* inscriptiones veteres confirmant, in quibus alterum pro altero promiscue adhiberi cernimus: ut *phidelis* pro *fidelis*.—*Middleton de Lat. Liter. Pron. Disq.*

V is a labial: it is formed by a touch of the upper teeth and the under lip. It is, indeed, the flat *f*, to which letter it bears the same relation as *p* does to *b*. The Arabians and Persians have not this sound; and Wallis is of opinion that the English Saxons either had it not, or wrote it by *f*; for they used, he says, no *v* consonant, and they wrote many words with *f*, as the English did after them, for some ages, which are now written with *v*, as well as those which are now written with *f*: as *gif*, *heofon*, etc. which are now written, *give*, *heaven*. And Priscian acknowledges, that the Latins formerly pronounced *f* with the same sound, with which afterwards the *v* consonant was pronounced.

In the third column, are *c*, *g*, *q*, *x*.

C and *g* are both gutterals; *c* has the sound of *s* and *k*; *g* of *j* and *k*. As the sound of *k* is usually given to *c*, there is great reason for supposing that this was its original sound.* In the less frequent sound of *c*, the guttural becomes a hissing sound. The hard sounds of *c* and *g*, (ka, ge) are produced by a stroke in the throat, and are consequently gutturals: *g* is the only weak sound of *tch*, as in *church*; *ch* is a guttural aspirated.

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* Wallis observes, that the Latin *k* was formerly used for *c*: for the Romans wrote indifferently *Calendæ* and *Kalendæ*.

Q is the strong sound of *c*, which, as was before observed, is a weak guttural.

X is written *egs*, *ecs*, and *eks*; it is a guttural aspirate, with a hissing termination. Aspirate and hissing are compound sounds.

The fourth column contains *d*, *h*, *t*, *z*.

D is a dental, or produced by pressing the tongue against the gums of the upper teeth, and then separating them.

T is also a dental, and is similarly formed.

H. This letter is no more than an aspiration, or breathing forcibly before the succeeding vowel.

Z is a hissing dental. It is the flat *s*, and bears the same relation to that letter, as *b* does to *p*, and *f* to *v*. It is formed by placing the tongue in the same position as in *t* and *d*, but not so close to the gums as to stop the breath: a space is left between the tongue and the palate for the breath to issue, which forms the hissing or buzzing sound of the letter.

L, *m*, *n*, are placed in the centre because they are of a middle nature between mutes and consonants. They are generally termed liquids, because, in pronunciation, they easily flow into and combine with the mutes. *L* is a weak palatal, *m* is a labio-palatal, and *n* is a strong palatal.

R is not found in all languages. It is formed by the forcible expulsion of the air, which during its passage, causes a tremulous motion of the tongue. The Greeks sometimes wrote this letter with an aspiration, and we follow their example in *rhetoric*, *rhythm*, etc.

S is a hissing palatal, and is formed in the same manner as *z*.

J and *v* are placed between the highest vowels and the weakest consonants.

We shall subjoin the following tabular view of the powers and qualities of the consonants, according to this system.

	Labials.	*Gutturals.*	*Dentals.*
A	B a labial with a weak touch.	C a guttural with the sound of *k*; a weak touch.	D a weak dental.
E	F a labial with a strong touch aspirated.	G a guttural; weak sound of *che*.	H a dental aspirated.
I j	k L a weak palatal.	M a labio-palatal.	N a strong palatal.
O	P a labial with a strong touch.	Q r the strong sound of *c*.	s T a strong dental.
U	V w a labial with a weak touch, but aspirated; it is the weak sound of *ph*.	X a guttural aspirated, with a hissing sound.	y Z a hissing dental.

As in the course of this chapter we have noticed the schemes of different authors on this subject, it may be as well to insert here the following tables of the consonants; extracted from Dr. Wallis, Mr. Walker, and Mr. Elphinston.

(1. From Dr. Wallis.*)

Synopsis of the Letters.

Consonants.	Labial or Lip	Mute	P	F	F	
		Half Mute	B	V	W	
		Half Vowel	M	a Lowing		
	Palatine or Palate	Mute	T	S	TH	L R
		Half Mute	D	Z	DH	
		Half Vowel	N	a sigh		
	Guttural or Throat	Mute	C	N	CH	
		Half Mute	G	Y	G	
		Half Vowel	*n*	a sigh		

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* *Grammatica Anglicana*, p. 35.

(2. From Mr. Walker.*)

An Analogical Table of the Consonants.

Mute labials	sharp *p*, *pomp*	labio-nasal liquid *m*.		
	flat *b*, *bomb*			
Hissing labials	sharp *f*, *if*			
	flat *v*, *of*			
Mute dentals	sharp *t*, *tat*	aspirated	*etch*	dento-nasal liquid *n*.
	flat *d*, *dad*		*edge*, or *j*	
Hissing dentals	sharp *s*, *say*		*esh, passion*	dental liquid *l*.
	flat *z*, *as*		*ezhe, vision*	
Lisping dentals	sharp *th, death*			
	flat *the, sythe*			
Gutturals	sharp *k*, *kick*	guttural liquid *r*.		
	flat *g*, (hard) *gag*			

Dento-Guttural or nasal *ng*, *hang*.

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* Critical Pronouncing Dictionary.

(3. From Mr. Elphinston.*)

TABEL OV AFFINNITY.

DHE LICQUIDS.

lingual,	*guttural,*	*dental,*	*labial,*
l	*r*	*n*	*m*

DHE MUTES.

direct;		*depressive;*		
simpel,	*aspirate,*	*simpel,*	*aspirate,*	
p		b		labial.
	ph, *f*		v	
t		d		dental.
	th		dh	
s, *c*		z, *s*		sibbilating.
	sh, *si*		[zh] *zi*	
k, *c*, *q*		g		pallatal or guttural.
	ch		gh	
	ch [*tsh*]		j, g [*dzh*]	compound.
x=*cs*		x=*gz*		

We may conclude this part of our subject in the words of Mr. Walker on a similar occasion. "In this sketch of the formation and distribution

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[*] 'Propriety ascertained in her Picture,' p. 3.

of the consonants, it is curious to observe on how few radical principles, the almost infinite variety of combination in language depends. It is with some degree of wonder, we perceive that the slightest aspiration, the almost insensible inflexion of nearly similar sounds, often generate the most different and opposite meanings. In this view of nature, as in every other, we find uniformity and variety very conspicuous. The single *fiat*, at first imprinted on the chaos, seems to operate on languages; which from the simplicity and paucity of their principles, and the extent and power of their combinations, prove the goodness, wisdom, and omnipotence of their origin.

" This analogical association of sounds is not only curious, but useful: it gives us a comprehensive view of the powers of the letters: and from the small number that are radically different, enables us to see the rules on which their varieties depend: it discovers to us the genius and propensities of several languages and dialects: and when authority is silent, enables us to decide agreeably to analogy.

Sect. 5. The derivation of French from Latin, shown to consist, principally, in the change of certain letters according to established rules.

When two different nations have an intercourse together, either by means of war or commerce, an attempt is made on both sides, to render the language of each, mutually understood. For example, France was once conquered by the Romans. The French people were, of course, subject to the laws of their conquerors, and if they had any complaints to prefer before the courts, were, of necessity compelled to make them in Latin.

The people in acquiring this language, did not resort to grammars; they had heard a particular name given to a particular object, another name to another, etc. and had constantly seen the objects characterised by these names. The French had heard the Romans mention a *bridge*, which they called *pons;* they heard them speak of the expense of a bridge, (*pontis*) of going to a bridge (*ponti*) of destroying this bridge, (*pontem*) of going far from it, (*ponte*) of more bridges, (*pontes, pontium, pontibus, etc.*) The common people seeing such terminations affixed to each word, and not caring to understand or remember them, rejected them off at once, preserving the body of the word *pont*, and forming the French *ponte*. The Spaniards and Italians followed the example. The terminations, which, in Latin, formed the declensions, were omitted; and as in this last word, so in many other derivatives from Latin appellatives, the last vowel only was changed, and a great part of the original word remained. What is done in adjectives and substantives, also takes place in *verbs*.

In *Latin*, the verbs have their infinitive moods terminated in *re*; once preceded by *a*, once by *e*, and once by *i*, as *are*—*ere*—*ire*. It has been observed, that the consonants are weak, strong, aspirated, and hissing. All nations used the letters of the alphabet, but they changed the pronunciation according to the genius of their respective countries. The language of one people abounds with weak letters, others with strong, hissing, or gutteral letters, etc.

The Latin word *frater* when changed into French, has the letter *a* weakened, and it becomes *e*—as in *frere*: the deep Roman *a* is taken away, and the weaker letter *e* is substituted, as in mare, *mer*: chare *chere*; pater, *pere*; catena, *chaine*. As it is the genius of the French language to shorten their verbs, the Latin infinitive *are*, becomes *er*; as in amare, *aimer*. In the *third* conjugation the final *e* only is cut off, and the *ir* remains, as in finire, *finir*; venire, *venir*, etc. etc. In the *second* conjugation which ends in *ere*, were the final *e* to be rejected, *er* only would remain, which would be the same termination as that of the first conjugation. If it be changed into *i*, the third conjugation will appear; we seem then in danger of losing a whole conjugation. This inconvenience, however, will be soon obviated. The genius of the language requires that the sound should be shortened; there remains, then, no other mode than to deprive the *ere* of the first vowel, and the second conjugation in *re* will be found, as perdere, *perdre*. By taking away the vowel that precedes the *r*, this letter would come into contact with a preceding consonant, with which, in some cases, it would be impossible for it to stand. The verb *valere*, would, according to the rule just given, become *valre*; but as *l* and *r* cannot stand together, one should be taken away. To connect them a sharp vowel must be inserted, and this must be *e*, but then the conjugation would be lost. Let us try *i*, and we shall find it will become *oir*.

The Latin *tres* is changed into *trois*, for valere, there is *valoir*; this cannot be an irregular conjugation, for all the remaining parts are conjugated regularly; as there is only the infinitive *valoir*, it is then neither regular, nor irregular, but *regulated.* This *oir* can only stand for the infinitive mood; it is instead of *valre*: if the infinitive mood be not found regularly, the future cannot be given. As *r* is indispensable, we must part with the *l*. The Latin word *calx*, is made *chalk* in English, but in pronouncing this word, the *l* is opened and the pronunciation becomes (*chawk*) changing the *c* into *ch*. In French, *calx* becomes *chaux*; in the Latin word *alter*, the *l* is opened and *alter* is converted into *autre*; saltare into *sautre*.

From the Latin *pulvere*, the French infinitive would be *pulver*, but the *l* is resolved into *ou*, and *v* is changed into *d*; thus, *pulvere* becomes *poudre*; cinere *cindre*. In *vaundre*, the *l* must be rejected, and *au* supplied; thus *valre*—*vau*. In the future, the French do not say, as in Latin or English, *I will do*,—but I *have to* do; they take the present of *avoir*, add it to the infinitive, and thus form the future *vaudr-ai*, *vaudr-as*, *vaudr-a*; we cannot say *voulerai*. In the present tense, in Latin, there is *valet*; the *e* is rejected, and as the *l* and *t* cannot stand together, *l* is opened as before, and we immediately have *vaut*.

It has been shown already, that the infinitive moods of the Latin ending in *are*, *ere*, *ire*, are changed into *er*, *re*, *ir*, in French. The first and last conjugations are both made by rejecting the final *e*. Afterwards we find a fourth conjugation in *oir*; it has been shown how this is formed, and that it is not a new conjugation, for no tense or person is formed from *oir*.

If the Latin and French languages are compared together, it will be easy to prove how much one is derived from the other, and how very materially the study of the Latin and French will facilitate the acquisition of other languages. Those who are acquainted with the Latin language know that *mus* is the termination of the first person plural, so that from *are* we get *amus*, from *ere*, *emus*, from *ire*, *imus*. If the first person plural in French be required, the vowel must be omitted, and *ms* will be given. The French words *non*, *nom*, *noms*, are all pronounced in the same manner; for when *m* is final, it is pronounced as *n*, which has a nasal sound: *m*, then, is no more necessary, for if we write according to the pronunciation it would be *nons*.

In the verb *danser*, for example, the infinitive termination *er*, is changed into *ons*, and we have *dansons*. The second person in Latin, is known by the termination *tis*—*atis*—*etis*—*itis*: the same principle that directed the French to shorten the former person, induces them to pursue the same method here. The *i* is taken away and *ts* is left, which has the same sound as, and may be supplied by, *z*. The word is written according to its pronunciation, and from *danser*, is produced *dansez*. The Latin termination *ent* is continued in French, but is mute; they say *dansent* (danse) as if there were no *ent*.

In the next tense the past time occurs; we *danced yesterday*: again for the first person plural there is *ons*, but this would denote the present tense; to distinguish, therefore, the imperfect from the present, tense, and to show that it is past, *i* is placed before *ons*, as *ions*; and this is always found in the imperfect in all conjugations. In the second person, present, there is *ez*; to denote the imperfect, *i* must be added as *iez*. For the third person, *ent* with the *i* before it, *ient*; but this requires some little addition; *o*, therefore, is placed before the *i*, and *oient* is formed. This tense, then, is *dansions, dansiez, dansoient*.

The future, *we shall dance*, will require something more than *ons*; the whole infinitive is here taken, and the termination *ons* is added; thus we have *danser, danserons, danserez*, and *danseront*. From *ont* comes the infinitive *danser*, to dance. This future also has an imperfect, *I would dance*; *i* the sign for the imperfect being added, *danserions, danseriez, danseroint*, are obtained. If the word *danserions* be analysed, thus, *danse* | *r* | *i* | *ons*, it will be found that *ons* is the sign of the third person plural; *i* of the imperfect; and *r* of the future.

There are yet two more tenses to be considered. The first is the preterperfect, *we have danced*, or we danced. In Latin, the terminations are *mus, stis, runt;* the *mus* is softened into *mes*, as in *parlames;* the *stis* was formerly written *parlastes*, but as the *s* was not sounded, it was entirely dropped, and the *i* being softened, formed *parlates;* and *runt* was softened into *rent*, as in *parlerent*. In the imperfect of the subjunctive mood, the terminations are *ssions*, *ssiez*, and the third person would be *ssoient;* But that would be a longer terminations than the genius of the French language would allow, it is therefore shortened into *ssent*.

If the person, tense, etc. of the word *finiriez*, be required, it must be remembered that *ez* is the sign of the second person plural; that *i* is the sign of an imperfect tense, and *r* of the future: it is therefore the second person plural of the future imperfect. In *rendroit*, *t* is the sign of the third person singular, *oi* is the sign of the imperfect, and *r* of the future; it is then the third person singular of the future imperfect, and belongs to the conjugation ending in *re*.

A French verb which is termed *irregular*, is nevertheless derived regularly from the Latin. For example the verb *plaire*. This verb is evidently derived from the Latin *placere:* to convert this word into French, it must be curtailed, and the first step towards this, will be to leave out the *e* before the *r;* there will then be *placre,* but as *c* and *r* cannot combine together, and the *r* is absolutely necessary, the *c* must be dispensed with; the *a* being changed into the softer sound *ai,* which forms *plaire.* To form the different persons and tenses, it remains only to reject the final *e,* and add the proper terminations.

The French verb *connoitre* is derived from the Latin *cognoscere.* We will now consider the various changes which take place during the process of derivation. In the word *connoissance,* which is also derived from *cognoscere,* the *sc* is changed into *ss,* and the *o* is shortened into *oi, oiss:* we then have *cognoissere;* but as there cannot be a double *e,* the first is taken away, because the latter is wanted for the infinitive termination; the word becomes then *cognoissre:* the *r* being too weak by itself, it must be strengthened by a *d* or *t;* a *t* is preferred; the *g* is changed into *n,* and the double *s* is lost—at last *connoitre* is obtained.

In the *future,* the *r* is retained; as *connoitrai, connoitras,* etc. but in other tenses, the *r* is changed into its original *s*—*je connois, tu connois,* etc.

Another example may be found in *mourir.* In the Latin, there is for the infinitive, sometimes *moriri,* but generally *mori* To form *mourir,* the final *i* must be taken from *moriri,* and the *o* softened into *ou;* for the future, the *ir* is rejected, and we have *je mourai—tu mouras,* etc. In the present, the infinitive termination is omitted, and an *s* is added, as *je mours, tu mours;* but as the *ou* is too long, it is changed into *eu,* as *je meurs,* etc. In the same manner, when in the Latin word *dolor* there are two short *o*'s, they are strengthened and converted into *ou* and *eu;* as, dolor, *douleur;* color, *couleur;* and from *dolorosus* comes *doulouneux.*

When the Latin word *debere* is to be sought in French, the *b* must be changed into *v (devere,)* the second *e* being rejected, it becomes *devre,* but as the *v* and *r* cannot combine together, the termination *re* is changed into *oir, devoir.* This verb then is not regular, but regulated. It is impossible to obtain the future from *devoir,* as it is irregular, and must be derived from the regular verb *devre.* In the present, the *r* is rejected, and it becomes *devs;* but, as *v* and *s* cannot stand together, and as *s* is the personal character, it must remain, and the *v* be omitted; the word *des* is then left, but as the *e* is too weak, it must be strengthened by changing it into *oi:* we have then *dois—je dois, tu dois, il doit.* When in the plural there are two syllables, the *e* is restored, and *devons, devez, doivent,* are obtained.

It remains only to fix the conjugations. This may be easily done by observing which of the vowels, *a, e, i,* precedes the personal terminations *rons, rez, ront.* The Latin conjugations may be learned in the same way. In the verb *aller,* we do not, in the present tense, say *j'alle,* but *je vais;* the *vais* is not then derived from *aller,* but from the German, *wenden.* It takes part of the present from one verb, and the remainder from another. When the Latin verb *habere* is to be converted into French, the *b* is changed into *v,* and *havere* is formed; the *h* not being sounded in French, it is omitted, as *avere;* the first *e* is rejected, and the *re* being changed into *oir,* we have *avoir.*

In the present, the *oir* would be *s—avs;* but *v* and *s* not combining together, the *v* must be omitted, and the *a* is softened into *ai*—making *ais;* the *s* not being pronounced, it is therefore dropped; we have then *ai—j'ai:* the future comes from the infinitive *avre;* the *v* being resolved into *u;* as *avrai—aurai—auras—aura.* The *second* person singular always takes *s* for its character, as in Latin—*habes—as=debes—dois.* The *third* person has *t* from the Latin, but as this letter was not pronounced in some cases, it has been dropped; yet is is again brought into use, when the nominative case is put after the verb, when two vowels would come together, as *aima-t-il?—moura-t-il?* When the nominative precedes the verb, the *t* is omitted.

The following observations showing the process of derivation in some particular languages, and the mode by which one letter is substituted for another, will serve to illustrate the subject upon which we have been treating. They are taken from Dr. Rees' Cyclopædia.*

"The substitution of a labial for an aspirate or a guttural, or a diphthong, forms a general principle which pervades the Latin tongue in its formation from the Greek. Hence *vicus*, a village, from οικος; *vinum*, wine from οινος; *ovis*, a sheep, from οις; *video*, to see, from ειδω. With respect to our own language a similar analogy prevails, which has converted a guttural into a labial; thus *laugh* is pronounced *laff*; *enough*, *enuff*; and most of those words which begin or end with *y* and *w*, whether derived from Hebrew, Greek, or Gothic, began or ended with a guttural. On this general principle *year* may safely be said to be derived directly, or indirectly, from γυϱος, a *circle*, and means a period, or revolution of time; *wheel* from ειλω to *roll*; etc. etc.

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* Art. *Etymology*.

"The prefixing of the letter *s* to Greek words is a principle that pervades the *Latin* tongue; as in *sperno*, to despise, from πτερνη, the *heel*; thus the primary sense of *sperno* is, to put the heel upon; on the same principle is *salio*, *insilio*, insult, taken from ἁλλομαι. The *French* generally drop the gutturals either in the middle or at the end of words; hence we should be justified by an invariable analogy in saying, that *eau*, *water*, is from *aqua*, and *seal* from *singalus*. The *Italians* generally drop the liquid *l*; agreeably to this custom of the language, *fiume* is derived from *flumen*, a stream, and *piano* from *planus*, a plain. In *German*, most of those words which have *t* in English, are used with an *s*; as *waser*, *water*; *besser*, *better*; *es*, *it*: and the corruption of *m* into *f* or *v*, is a principle that runs through the *Welsh* tongue; thus, *ve*, *voer*, and *vayr*, are but the Latin words, *me*, *mare*, and *major*."

We shall conclude this section with some excellent rules given by MR. GREENWOOD,* for ascertaining when an *English* word is derived from Latin, and how it may be made Latin again.

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* Essay toward a Practical English Grammar, p. 212.

1. Most English words, ending in *nce*, or *cy*, are derived from Latin words in *tia*; *Temperantia, Clementia*; *Temperance, Clemency.*

2. Words in *ion*, in English, are made Latin by casting away *n*; as, *Question, Questio*; *Religion, Religio.*

3. Words ending in *ty* are made Latin by changing *ty* into *tas*; as, *Liberty, Libertas*; *Charity, Charitas.*

4. Words ending in *ude* are derived from the Latin, by changing *o* into *e*; *Fortitude, Fortitudo*; *Gratitude, Gratitudo*, etc.

5. Adjectives, which end in *d*, do for the most part become Latin, by the addition of *us*; as *Rigid, Rigidus*; *Putrid, Putridus*, etc.

6. Words ending in *t*, *n*, or *r*, between two vowels become Latin by changing the last vowel into *us*; as, *Mute, Mutus*; *Obscure, Obscurus*; *Obscene, Obscœnus*, etc.

7. Most words ending in *nt* are made Latin, by changing *nt* into *ns*; as *Latent, Latens*; *Vigilant, Vigilans*, etc.

8. Many words ending in *al*, by the addition of *is* become Latin; as *Liberal, Liberalis*; *Substantial, Substantialis.*

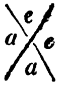
Sect. 6.—Mode of learning the Conjugations and Declensions of a Language.

In the Latin infinitive *are, ere, ire,* are the terminations of the primary conjugations; there are two more in *ĕre* which are secondary. The first person singular is given by the termination *o,* as *eo—deleo* from *delere;* and *io—audio* from *audiere;* but we do not say *amao* from *amare,* but *amo: a* and *o* are two dependant vowels; the *a* is merged in the *o* according to the genius of the language; for a labial cannot precede a lingual vowel. In *eo* and *io* there is first a lingual, and then a labial vowel, we consequently have:

amare—delere—audire—lambĕre—fugere
amo —deleo —audio —lambo fugio

The preterperfect tense is terminated by *vi,* as *amavi—delevi—audivi,* except in the secondary conjugations which only change the *o* of the present tense into *i;* as *lambo—lambi—fugio—fugi.*

The supine is known by the termination *tum,* as, *amatum—deletum—auditum—lambitum—fugitum.* The personal characters are in the singular *o* (am*o*), *m* (amaba*m*), *s* (ama*s*—amaba*s*, *t* (ama*t*—amaba*t*); and in the plural, *mus*, *tis*, *nt*, as (ama*mus*, ama*tis*, ama*nt*). The third person plural from *ire* is not *int*, but being softened in the pronunciation by the insertion of *u*, becomes *iunt*, as *audiunt*, *fugiunt*; and the secondary *ĕre*, as in *lambere* does not make *lambent* in the third person plural, but *lambunt*. The different *tenses* to be considered are the present, imperfect, preterperfect, preterpluperfect, and future; and there are two *moods*, the indicative and the subjunctive, each of which contains all the foregoing tenses.

In the present tense of the subjunctive mood when the vowel is *a* in the infinitive, it is changed into *e*; and when it is *e* in the infinitive, it becomes *a* in the subjunctive; this may be thus remembered 

amare—*amem*; *delere*—*deleam*; *legĕre*—*legam*. The character of the imperfect is *ba* in the indicative, and *re* in the subjunctive mood. The word *bare* will bring this to our recollection—*amabam*—*amarem*; *delebam*—*delerem*.

The character of the preterperfect is *i* in the indicative, except in the secondary verbs, and in the subjunctive is *erim*; *amavi*—*amaverim*; *delevi*—*deleverim*;—*lambi*—*lamberim*.

The preterpluperfect of the indicative is known by the termination *veram,* etc. except when the preterperfect is formed simply with *i,* in which case it is *eram.* The same tense in the subjunctive is *vissem,* or, *issem:* – *amaveram*—*amavissem*;—*deleveram*—*delevissem*; *legeram*—*legissem.*

The future of the indicative is formed by *bo* in *amo* and *deleo,* and by *am* in *lambo* and *fugio.* In the subjunctive mood, the future termination is formed from the preterperfect indicative by the addition of *ero* throughout; as *amabo*—*amavero*;—*delebo*—*delevero*; *lambam*—*lambero.*

The following tables of the Latin conjugations and declensions may be committed to memory, by placing them on a wall, a mantlepiece, a door, etc. preserving the situations of the moods, tenses, and declensions as described in the tables.

Table of the Latin Conjugations.

Infinitive terminations all in *re*.	āre amo	ĕre lego	ēre deleo	ĕre fugio	īre audio
Preterperfect	avi	i	evi	i	ivi
Supines	atum	tum	etum	tum	itum
Indicative Mood	Present o	Imperfect ba	Pret. perfect vi	Preterpluper. veram.	Future bo-bis am-es
Subjunctive 	m	re	verim	vissem	vero-is
Singular and plural endings of all the tenses in the indicative and subj. moods.*	Singular. 1. O-m 2. s 3. t			Plural. 1. mus 2. tis. 3. nt	

*Except 1st and 2nd persons singular of the Preterperfect.

Table of the five Latin Declensions.

Singular.	1. Mensa.	2. Dominus	3. Sermo	4. Servus	5. Dies
Nom.	a	us	o—n	us	es
Gen.	æ	i	is	us	ei
Dat.	æ	o	i	ui	ei
Acc.	am	um	em	um	em
Abl.	a	o	e	u	e
Plural.					
Nom.	æ	i	es	us	es
Gen.	arum	orum	um	uum	erum
Dat.	is	is	ibus	ibus	ebus
Acc.	as	os	es	us	es
Abl.	is	is	ibus	ibus	ebus

N. B. The Vocative is not inserted, because it is the same as the Nominative, except in the 2d declension, where it makes *e* instead of *us*.

Sect. 7.—Particular Directions for the acquisition of a Language.

Having fixed the terminations of the declensions and conjugations, and observed the signs of the different cases, the student may proceed to the learning of a language. Supposing this to be the Latin language, an easy book must be first taken, for instance, a Latin Bible, and an English one, placed by the side of it. In the latter we read, "*In the beginning God created the heaven and the earth,*" etc. étc. In the Latin it is, *In principio creavit Deus cœlum et terram*, etc.

The two versions having been compared, the first word is found to be the same in both; the second in the Latin (principium) does not resemble the English; its meaning may, however, be ascertained with tolerable accuracy from its situation; and as *o* is the sign of the ablative singular, there will not be much difficulty in discovering the translation of *principium* to be 'in the beginning.' The next word in Latin is *creavit*, this is found to be a verb by its termination; cre-a-vi-t is proved to be of the first conjugation by the character *a*; *v* shows it to be the preterperfect tense, and *t* gives the third person singular. It is impossible to err in assigning *creavit* its proper meaning; the word so nearly resembles the English *created*.

Who created? *God* created—*Deus* is the nominative. What did he create? the heaven and the earth: *cœlum et terram* will immediately be presented to us; our *cœlestial* and *terrestrial* cannot fail to give the meaning of these words, and the final *m* will point out to us that they are in the accusative case.

In this manner, we should proceed for two or three pages, and then read them for three or four times more, till we can translate with tolerable facility. We do not consult grammars to *learn* the rules, but merely to solve any difficulty that may occur. In the present mode, the grammar is learned in the language, and not the language in the grammar. Every rule is an abstraction, and cannot be understood without an example. Instead of long rules we learn examples, and these should be fixed upon the walls of a room in proper order.

The striking analogy between many modern languages, and the consequent facility of acquiring several languages, at the same time, must be evident to every one. This is particularly the case with the English, German, Latin, French, Italian, Spanish, and Portugueze languages.

CHAP. VI.

Systematic Tables.

The knowledge of Systematic Tables is peculiarly important to the student in any branch of science, whether it be botany, zoology, chemistry, mineralogy, etc. and the mode of fixing these tables in the memory, must be deemed of very great use to all who are concerned in such pursuits. The application of this art to such tables will be shown in the following Mineralogical table of HAÜY.

The characters of Minerals are of three kinds, *Physical*, *Geometrical*, and *Chemical*.

I. Physical Characters.

I. GENERAL.

1. SPECIFIC GRAVITY, (according to the Hydrostatic balance of Nicholson.)

2. COHESION.

  1. *In Solids is proved:*

    I. By friction with a file.

      i Yielding.

      ii Not yielding.

Physical characters, continued.

- II. By rubbing the angular parts of one mineral against the angular parts of another mineral.
- III. By Percussion with a hammer.
  - *i* Difficult to be broken.
  - *ii* Brittle.
  - *iii* Crumbling.
- IV. By a Steel.
  - *i* Giving Fire.
  - *ii* Not giving Fire.
- V. By flexion or pressure.
  - *i* Simply Flexible.
  - *ii* Elastic.
  - *iii* Ductile.
  - *iv* Soft.
    - 1. In its own nature.
    - 2. Having imbibed a fluid.
- VI. By the force of Traction.

2. *Liquids* (yielding with the slightest pressure.)
   - I. By moistening the hand.
   - II. By not moistening it.

II. PARTICULAR. (As found by the senses.)

1. IMPRESSION UPON THE TONGUE.
   - I. *By Taste.*
     - *i* Salt.
     - *ii* Astringent.
     - *iii* Sweetish.
     - *iv* Pungent.
     - *v* Bitter.
     - *vi* Urinous.

Physical characters, continued.

- II. *By adhesion.*

2. FEELING.
   - I. *Unctuous and Greasy.*
   - II. *Smooth, but not greasy.*
   - III. *Harsh.*
3. SMELL.
   - I. *By Breathiug.*
   - II. *By Rubbing.*
   - III. *By Heating.*
     - *i* Aliaceous, or garlic-like.
     - *ii* Bituminous.
     - *iii* Sulphureous.
4. SOUND.
   - I. *By Percussion.*
   - II. *By Bending.*
5. LIGHT.
   - I. *By Reflexion,* (producing Colour.
     - *i* Colours of the mass.
       - 1. In their species.
       - 2. In their distribution.
         - *i Uniform.*
         - *ii Variegated.*
           - 1. In stripes.
           - 2. In spots.
       - 3. In their action.
           - 1. By change of colour.
           - 2. By reflex irises.

Physical characters, continued.

- *ii* Colours of the Streak.
  - 1. Similar.
  - 2. Dissimilar.
- *iii* Colours of the Powder.
  - 1. Similar.
  - 2. Dissimilar.
- (Producing Lustre)
- *i* Brilliant.
- *ii* Dull.
- *iii* Greasy.
- *iv* Silky.
- *v* Pearly.
- *vi* Metallic.
- *vii* Pseudo-Metallic.

II. *By Refraction.*

(Transparency.)

- 1. Limpid.
- 2. Transparent but coloured.
- 3. Translucid.
- 4. Opaque.

III. *By Phosphorescence.*

- *i* By heating.
- *ii* By rubbing.

15. ELECTRICITY.

I. *Passive.*

- *i* By communication.
- *ii* By rubbing.
  - 1. Vitreous.
  - 2. Resinous.

Physical characters, continued.

- *iii* By heating.
  - (Vitreous on one side, and resinous on the other.)
- II. *Active.*
  - *i* Vitreous.
  - *ii* Resinous.
  - *iii* Neither vitreous nor resinous.

7. MAGNETISM.

- I. *Simple.*
- II. *Polar.*

II. Geometrical Characters.

I. FORM.

1. DETERMINABLE.
   - I. Elementary.
   - II. Secondary.
2. INDETERMINABLE.
   - I. By rounding off the surfaces and angles.
   - II. Striated and rough.
   - III. Amorphous bodies, (i. e. bodies of an irregular form.)
3. IMITATIVE.
   - I. Bodies formed by concretion.
   - II. Pseudomorphous bodies, (i. e. such as have assumed the form of another body, for which they are substituted.)

Geometrical characters, continued.

II. STRUCTURE.

- 1. LAMINATED.
- 2. LAMELLATED.
- 3. STRATIFORM.
- 4. FOLIATED.
- 5. FIBROUS.
    - i With parallel fibres.
    - ii With radiated fibres.
- 6. GRANULATED.
- 7. COMPACT.
- 8. CELLULAR.

III. FRACTURE.

- 1. DIRECTIONS.
    - I. Longitudinal.
    - II. Transverse.
    - III. Indeterminate.
- 2. VARIETIES.
    - I. Conchoidal.
    - II. Smooth.
    - III. Rough.
    - IV. Scaly.
    - V. Articulated.

III. Chemical Characters.

I. BY FIRE.

- 1. WITH STRAW.
    - I. Fusibility.
    - II. The result of Fusion.
    - III. The Reduction of metallic Substances.

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Abl.	a	o	e	u	ē
Plural.					
Nom.	æ	i	es	us	ēs
Gen.	arum	orum	um	uum	ērum
Dat.	is	is	ibus	ibus	ēbus
Acc.	as	os	es	us	es
Abl.	is	is	ibus	ibus	ēbus

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door a *tongue* is placed as the emblem of *taste*; the door being divided into six compartments, in the first is found a *cube of salt*, to convey the idea of saline; on the second a *string* for astringent; in the third some *sweetmeats* for sweetish; in the fourth, a *knife* for sharp, which may cut the string in the second compartment; *bitter* in the fifth division will come immediately under sweetish; and cannot fail to be remembered by the contrast which it presents; *urinous* is in the sixth and last division, and will need no symbol. In this way must the pupil proceed with the remaining divisions of the table, fixing each upon an object, and connecting some striking circumstance with the object, that will afford a permanent idea of the system which he is desirous to acquire.

The application of mnemonics to *zoological tables*, is peculiarly easy and agreeable, as they are entirely formed of *sensible objects*, and will readily associate with our hieroglyphics. The Linnean class, *mammalia*, for instance, may soon be fixed in our minds, by taking a single *order*, and placing the different *genera*, if not more than five or six, on different parts of a single hieroglyphic;—and forming associations with the symbol, and making a little narrative or tale. If the *genera* should be numerous, two or three hieroglyphics may be employed for that order.

We shall not give the associations, because they are so plain and obvious; and as the invention of these will afford an agreeable exercise for the student. The following table, we conceive a sufficient *specimen*, but the application may be made, with equal facility, to the different classes of birds, amphibia, fishes, insects, worms, and zoophytes; and with great advantage to any single class which may be preferred from the particular inclination or pursuit of the student.

CLASS I. MAMMALIA, or animals provided with teats.

Symbol.		
Tower of Babel.	ORDER I.	PRIMATES, or chiefs of the creation.
	Genus 1.	Simiæ, oran-otan, apes, monkeys, baboons.
	2.	Lemur, maccauco.
	3.	Vespertilio, bat.
	ORDER II.	BRUTA.
	Genus 1.	Bradypus, sloth.
	2.	Dasypus, armadillo.
	3.	Manis pangolin.
	4.	Myrmecophaga, ant-eater.
	5.	Platypus, ornithorincus, or duck-bill.
Swan and Mountain.	ORDER III.	FERÆ, or animals of prey.
	Genus 1.	Canis, dog, wolf, hyæna, fox, and jackal.
	2.	Felis, cat, lion, tiger leopard, lynx, panther, &c.
	3.	Viverra, weasel, ferret, pole cat, civet.
	4.	Ursus, bear.

Symbol.	
	Genus 5. Didelphis, opossum.
	6. Macronus, kanguroo.
	7. Talpa, mole.
	8. Sarex, shrew.
	9. Erinaceus, hedgehog.
Looking-Glass and Throne.	ORDER IV. GLIRES, or sleepers.
	Genus 1. Hystrix, porcupine.
	2. Castor, beaver.
	3. Mus, mouse and rat.
	4. Cavia, guinea-pig.
	5. Arctomys, marmot.
	6. Lepus, hare.
	7. Sciurus, squirrel.
	8. Myoxus, dormouse.
	9. Dipus, jerboa.
	10. Hyrax, Cape and Syrian rabbit.
Horn of Plenty and Glassblower.	ORDER V. PECORA.
	Genus 1. Elephas, elephant.
	2. Camelus, camel, dromedary, lama, vicuna.
	3. Giraffa, giraffe or camel-leopard.
	4. Cervus, elk, deer-kind.
	5. Bos, ox, buffalo.
	6. Moschus, musk.
	7. Antilope, antelope, chamois.
	8. Ovis, sheep.
	9. Capra, goat.
Midas.	ORDER. VI. BELLUÆ.
	Genus 1. Equus, horse, ass, zebra.
	2. Rhinoceros.
	3. Hippopotamus.
	4. Tapir.

Symbol.	
	Genus 5. Sus, pig-kind, pecari, babiroussa.
	PINNATED MAMMALIA.
	Genus 1. Phoca, seals.
	2. Trichecus, morse or walrus, manati or sea-cow.
Narcissus.	ORDER VII. CETE or CETACEA, (cetaceous mammalia, or whale tribe.)
	Genus 1. Balæua, proper whales.
	2. Physeter, spermaceti whales.
	3. Delphinus, dolphin, porpoise, grampus.
	4. Monodon, narwhal, sea-unicorn.

The following table by Mr. NICHOLSON, showing the number of ounces Avoirdupois, in a cubic foot of some metals and other bodies, will be a useful exercise; the technical words to be formed out of the figures, we shall leave to the industry, and the associations, to the ingenuity, of the student.

Bodies.	Ounces.	Hieroglyphic.
1. Pure Gold cast	19258	Tower of Babel
2. Sea Water	1026	Swan
3. Standard Gold cast	17486	Mountain
4. Zinc	7191	Looking Glass
5. Bismuth	9823	Throne
6. Pumice Stone	914	Horn of Plenty
7. Heart of Oak	1170	Glass Blower
8. Rock Crystal, from Madagascar	2653	Midas
9. Lime Stones	1386	Narcissus
10. Agate	2590	Goliath

Bodies.	Ounces.	Hieroglyphic.
11. Tallow	942	Hercules
12. Green Glass	2620	David
13. Cast Iron	7207	Castle
14. Cork	240	Diogenes
15. English Tin hammered	7299	Æsculapius
16. Crude Platina in Grains	15602	Ceres
17. Standard Silver in Coin	10391	Archimedes
18. Ruby	4283	Apollo
19. Mercury	13568	Robin. Crusoe
20. Spermaceti	943	Peacock

CHAP. VII.

Poetry and Prose.

THE first materials of a poetic edifice are to be found in metaphors, allegories, and in various kinds of fiction; and, it is thus all images, comparisons, allusions, and figures, particularly those which personify moral subjects, concur in adorning such a structure. When these images are reduced into verse, the ear is delighted to a high degree, and the mind insensibly repeats them while the eye reads them. This is particularly the case with rhyme. Cadence, harmony, and especially rhyme, afford the greatest assistance to the memory that art can invent; and the images, or poetic fictions, that strike our senses, assist in engraving them deeply on our minds.

When a historal narrative is related in *prose*, the facts only are stated in a plain, regular order, without any minute description of the different objects which occur in the course of the history.

The poet, however, proceeds differently. He describes, minutely, every object which presents itself; if it be a mountain, we have a lively description of its situation, the objects seen from it, and the trees or houses upon it. Should there be a castle on this mountain, its antient and present state is accurately described, together with the characters of its various possessors and their contests for the occupation of it: these descriptions we read with pleasure, and they are more firmly imprinted upon the memory by the variety and succession of images employed in them.

In order to commit to memory any particular piece of poetry which may be divided into stanzas, each consisting of four, six, eight, or ten lines, etc. it is necessary to take one stanza at a time, to read it over, and to select the principal objects or images, and combine them with the *first* symbol; attaching the next stanza to the second symbol, and so on with the remaining stanzas. By these means we are not only enabled to recite the whole poem in regular order, but to repeat any one or more stanzas in any order,—to determine the numerical situation of any line or word in the poem—and to say how often any particular word may occur. As we are able to repeat any stanza in the poem, it will only be needful to count the lines or words, if it be required to determine the numerical situation of any line or word.

It will not be difficult to apply these principles to the repetition of poetry. A single illustration, perhaps, will be sufficient; and, for this purpose we take the first stanza of Goldsmith's *Edwin* and *Angelina*.

> " Turn, gentle hermit of the dale,
> " And guide my lonely way
> " To where yon taper cheers the vale
> " With hospitable ray."

We must here reflect, and imagine that we see a *Hermit* standing on the *Tower of Babel*, and turning round with inconceivable rapidity; a very large *taper* is placed upon his head. Angelina is walking by the tower and calling out loudly to the hermit ' to guide her lonely way;' the *taper* cannot fail to suggest the remainder of the stanza.

In a poem that is not divided into stanzas, we must take 4, 6, 8, or 10 lines, preserving the connection, and fix them upon a symbol. Several small pieces of poetry may be readily imprinted upon the memory by placing them upon the pictures, or furniture, of the wall of a room with which we may be acquainted. Though the symbols are not here actually resorted to, yet the principle that is pursued, is precisely the same, for what are the symbols, but pictures which line the walls of our imaginary rooms?

As a further illustration of the mode of committing poetry to memory, we shall give the following examples from *Nolegar*, as quoted by *Feyjoo*, in his *Cartas Eruditas.*[*]

First Example.

Fenix Divina
De tan bellas alas
Humilde, y piudosa
Al Cielo te enzalzas.

Divine Phœnix,
With such beautiful wings,
Humble and Merciful,
Thou raisest to Heaven.

"The *Phœnix* in the first verse of this stanza, (says Nolegar) must be placed on the first predicament of the sphere,[†] on the right hand, and a papal crown, or tiara, or any other thing belonging to the Church, must be put on its head; because we cannot apply any other material object, to represent the word *Divine;* we may then make a reflection or two on these images, and say, why has a Phœnix, the Papal Crown on its head? It is a *Divine Phœnix,* a *Divine Phœnix.* Then the second predicament of the left hand shall be taken for the second verse, and a drum with a stick to beat it, may be placed there; the stick may explain the word [*de*] with. * * *. I imagine that the drummer being ready to beat it, says [*de*] *with* and the drum [*tan*] *such;* in the same place, I would put two beautiful women sitting by the drummer, who should have two wings lying at his feet; and speaking of the second predicament, I would say, *De tan bellas alas* (with such beautiful wings.)

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[*] Tom. i.

[†] This will answer to the first place in the first wall of a room.

"On the third predicament opposite the first on the right, I would put a woman kneeling and soliciting the pardon of a poor man condemned to banishment, who should be there with a chain, and by this image I would recal to mind the words of the third verse, *Humilde y piadosa* (humble and merciful.) On the fourth predicament, I would place a piece of carpet, *(alfombra)* or any thing whose name begins with *al* [to,] and I would only use this syllable, to which I would sew the tester of a bed, and would say *(al cielo)* to heaven; and for the word *thou raisest* I would put a Priest, raising the Host, to whom the Curate *(ayudonte)* should hold some salt, saying *(ten sal ulzas)* take some salt, *(thou raisest.)* In this last image the figure Apenthesis is formed, and reflecting, I should say *(ensalzas)* thou raisest.

Second Example.

Pongan, Senor, el medio, y el gobierno
Los altos atributos de tu Essencia.

Sir, let Method and government be established
By the high attributes of thy Essence.

" In order to commit these verses to memory, (says Nolegar,) on the right hand of the table upon which I am writing, and where my inkstand is, I would place a slave, or a black woman, with a basket and two hens in it; and close to the slave a Marquis or Duke, who on entering my room should attempt to frighten the hens, at which the slave must say *(Pongan, Senor,)* Let them lay, Sir. On the right hand of the slave I would place a *Medio Celemin* (half a Peck measure,) and on the left hand *a Chain,* signifying the letter *(y)* *(G)* or some *(hiel)* Gall. For government, I would place one of the many governors of my acquaintance, who is astonished at what is going forward. I would reflect, and think that I heard him say, *Pongan, Senor, el medio y el gobierno.* To represent the other verse, I would put for *(los altos)* two or three pieces of timber with some tiles, taking these for the whole of a roof of a house, which consists of timber and tiles; and for (*atributos*) attributes, I would place two tributary Princes, with an image of the letter (A) on the head of one, who must be going to collect tributes or taxes, and if his name be Andrew, the better; because the (A) might be placed as an image of the name. Then supposing our food to be dependent on the collection of the taxes, it would be easy to remember, that Andrew was bringing some *attributes* by the letter (A); now, at the feet of this collector, I would place an alembic of Quintessences, or a *Distiller*, with a glass full of water, (*Quintessence*, already drawn,) who should mind not to break it with his feet; and close to the glass I would place a *small stick*, or the stick of a drummer made of iron, that we may remember it is not to be broken, because it might be used as we have already said, for an abecedario, meaning (*de tu*) of thy. In this manner, whenever I write, I shall remember that I have this verse at my right hand; *Pongan, Senor, el Medio, y Gobierno*; and on my left, the other; *Los altos atributos, de tu Essencia*."

When *Prose* is to be committed to memory, the particular passage, or chapter, should be read over carefully two or three times, and having selected the principal images or objects, it will be necessary to form a narrative by combining them with the different symbols. We should take a few lines only at a time, and proceed gradually in fixing the various objects presented to us.

To remember the principal points in a *Sermon* which is regularly divided into parts, it is only needful to take the different heads or titles as they are given, and arrange them on the cieling of the church or chapel, placing some on the cornice, and others in various parts, in regular order.* Or, a sort of imaginary tree may be supposed springing from the centre of the cieling, and the proofs and illustrations adduced by the preacher, may be suspended on its branches. This method will be rendered more effectual, if a symbol of the idea will be formed, as for

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* A plan somewhat analogous to this, is mentioned by Mr. DUGALD STEWART, who observes, "I have been told of a young woman, in a very low rank of life, who contrived a method of committing to memory the sermons which she was accustomed to hear, by fixing her attention, during the different heads of the discourse, on different compartments of the roof of the church; in such a manner, as that when she afterwards saw the roof, or recollected the order in which its compartments were disposed of, she recollected the method which the preacher had observed in treating his subject. *Elements of the Philosophy of the Human Mind*, p. 456.

Justice a pair of scales, etc. etc. This, however is not essential.*

Mr. Stewart, speaking of the assistance rendered to an orator, or *public speaker*, by the topical memory, in recollecting the plan and arrangement of his discourse, considers the accounts given of it by the antient rhetoricians, as abundantly satisfactory, and makes the following pertinent observations on the subject.

" Suppose (says this author) that I were to fix in my memory the different apartments in some very large building, and that I had accustomed myself to think of these apartments always in the same invariable order. Suppose farther, that in preparing myself for a *public discourse*, in which I had occasion to treat of a great variety of particulars, I was anxious to fix in my memory, the order I proposed to observe in the communication of my ideas. It is evident, that by a proper division of my subject into heads, and by connecting each head with a particular apartment, (which I could easily do, by conceiving myself to be sitting in the apartment while I was studying the part of my discourse, I meant to connect with it,) the habitual order in which these apartments occurred to my thoughts, would present to me, in their proper arrangement, and without any effort on my part, the ideas of which I was to treat. It is also obvious, that *a very little practice* would enable me to avail myself of this contrivance, *without any embarrassment or distraction of my attention.*"*

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* The chapter and verse of the text may be soon fixed, by changing the number of each into a hieroglyphic, and forming an association between the two.

A *public speaker* may arrange *the arguments of his adversary* on various parts of his person, and thus be enabled to review and answer a multiplicity of observations made by many different speakers. The first remark might be placed on his head, one in each eye, one in each ear, another on his nose, mouth, etc. etc. If it be required to remember a high number, we need only resort to the symbols: for instance, 27,819 will be fixed by remembering the names of *Don Quixote*, *Midas*, and *Robinson Crusoe*, the 27th, 8th, and 19th symbols, or, by changing the figures into letters, according to the scale in fig. 1, plate 2, and by inserting vowels, and forming words sufficient to construct a sentence, [illegible] cannot easily be forgotten. Any s[illegible] *shillings*, and *pence*, may be [illegible] to memory, by this last [illegible] have (if possible) but one word for the pounds, and always separate words for the shillings and pence.

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* *Elements of th*[illegible]

The advantages of this part of the system to the different professions are very great. The *minister—the legal student*, and the *Member of Parliament*, may all practise this method with success. The application of these principles will also render an essential service to the *merchant* and the *man of business*, in the various concerns of life.

CHAP. VIII.

Arithmetic.

In this chapter, we have given faithfully the substance of Mr. Feinaigle's Lecture on Arithmetic, without any attempt at illustration; and as this Lecture has been accurately detailed in a recent publication,* it is extracted from that work, but without any of the reporter's commentaries and observations.

" We have now to see how our methods will apply to Arithmetic.

" In this subject we think we have, or may have evidence, for every particular proposition. But let us think a little; in many cases we have certainty: but is certainty and evidence the same thing? For instance, we know that 6 multiplied by 6 gives 36: this is certain; but is it evident? All we can say is that we have learned so: but where is the evidence that 6 × 6 gives just 36? When you say that 6 × 6 is 36, you answer that it is three tens and six units; but see we this? How are we convinced that it is just 36, and no other number? It is only in our machine; but how it comes we know not.

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* Cross's Examination of Feinaigle's Arithmetic.

We have these products given us in our multiplication tables, which we all know how difficult it is for children to learn; nay, many grown persons cannot learn it, because it is founded only upon the poor natural memory, upon which we can never depend. We make it only an object of memory instead of presenting it to the intellect, and we have no evidence, because we want the first evidence. To find the first evidence we must consider the figures themselves. Let us see then what is in the figures: we have

1 2 3 4 5 6 7 8 9
10 20 30 40 50 60 70 80 90
100, etc.
1000, etc.

What comes after 9? Is it 10? No; 10 is a higher unit, and must therefore be placed before the 1; now what comes after 10? Is it 11? No; it is 20. Thus we find those nations did who employed letters for numbers: after having used the first 9 they went on thus, 10, 20, 30,

&c. and not 10, 11, 12, &c. Thus change these numbers as you please, you will always find they go from 1 to 9, and by considering the numbers in this way, the child sees at once that the rapport of 10 to 60 is exactly the same with that of 1 to 6; and all the relations of these numbers are at once in his mind. The first thing then must surely be to give the evidence of those figures; after this every thing will be easy. In problems, the greatest difficulty is to understand the question; when we do that, the problem is half solved; the mind then acts like an algebraical formula. O! we see—put this here, and that there; do this, and do that, and it is done.

" Let us see then how we are to get the true idea of number.

Let this be one, - - - - - - - - - O
Let it be one something, an apple, or an orange, or whatever, and let this be another, - - - - - - - - - - O
Now what have we here? Is this two? I see only two ones; and we say that these are equal to one two: But how know we this? Have we evidence in the thing itself that two ones are the same with one two? I should see two things in one thus; - - - - - - - - - - ⦶
O

and the child sees at once that two halves are equal to one; and that two halves and one are equal to one two. In the same manner I have for three, a circle divided into three sectors; and the child sees at once that three thirds are equal to one; and that the half of 3 thirds is one half; and that three thirds and two halves and one are equal to three. And so on for the higher numbers.

"Thus the child sees at once the proportions between the fractions: those things which are most difficult to be learned by the common way are here the first to be acquired, because they go with the first conception. If I say give me one half of three thirds, or one third of one half, or one half of one third, or one third together with one half of one third, he gives me them at once, because he has a clear conception of their meaning. I give not these things to the child, he must give them to me; and it is wonderful what calculations many children will make when they go on with their reason; but all this is gone when they begin with the usual methods, because evidence is taken away, and commonly we find that the more instruction they receive, the difficulty is the greater. But in our method they proceed with pleasure, because they continue to have evidence; and I will engage that any child instructed in this method, would in one fortnight perform calculations of which you have no idea. So true is this, that if we were to unknow all that we have learned, and begin from the foundation, it would be better.

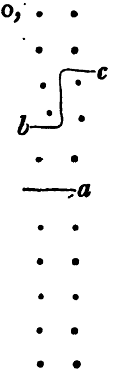
"We can go on with the same principles to Mathematics; in them we have three things, weight, measure, and number; but all are reducible to number.

"If we now represent our succession of . .
units thus, and divide ten into two halves, . .
as we have seen that this is necessary for . .
representing two in one. If I ask what . .
is 6 to 8, or give me one half of eight, . .
and one fourth of eight, the child finds
this at once, which is sometimes the solution of a difficult problem. If we go on to Addition, and ask what is 7 and 8? the child sees at once that 7 is equal to 5 and 2, and that 8 is equal to 5 and 3; so that 7 and 8 are equal to two fives and five, or one ten and five, or fifteen. In the same manner 6 and 6 are one ten and two, 8 and 8 are one ten and six, &c. &c. so that we see addition is certainly demonstrated thus; and subtraction is as evident.

"Let us go on then to Multiplication. Say that we ask how much is eight taken six times, the answer must be in tens and units, the child sees that 8 is equal to 5 and 3,
and 6 is equal to 5 and 1.

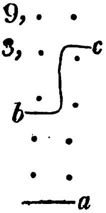
And multiplying these he has- - - 25
Thus every member must be considered by 15
what it is in rapport to 10 and 5. 5
3
—
48

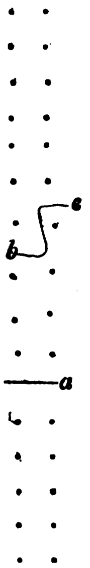
But let us see if this is not in our dots also,



We have certainly above *a* and below *b* and *c* four dots, which are the tens; above *b* we have four, and above *c* two; two multiplied by four give eight for the units, so that we have 48.

“In the same manner 7 multiplied by 9, we have 6 tens, and one multiplied by 3, or 3 units, that is 63.





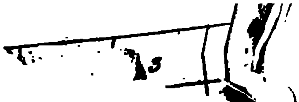
And so 8 multiplied by 9, we have 7 tens, and one multiplied by two units or 72, and so in every other case; only the rule must be changed when we change the object of the question.

So that we see a child has no need of the multiplication table; he burdens not his mind with it; he sees not only the relation of the different numbers, but he sees all how they affect and combine with each other; all is in the nature of the thing; the evidence is before him.

"Let us now go on to Division. Suppose we have to divide 63 by 7; let us see if this is not included in the nature of the thing. We have

7)63(

If we subtract the 7 from 10, we have 3; and



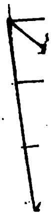
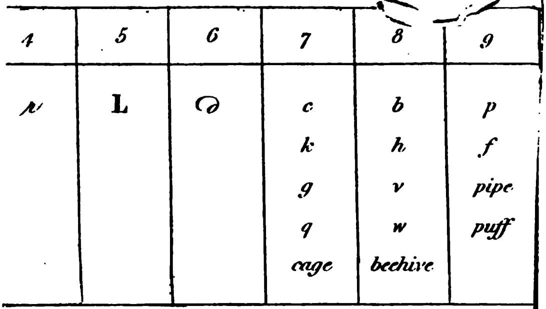
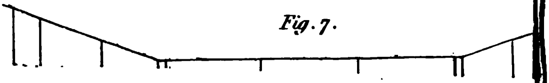


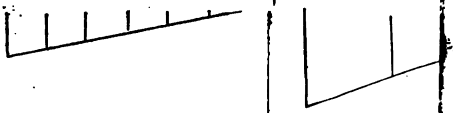
Fig. 2.



4	5	6	7	8	9
r	L	∂	*c* *k* *g* *q* *cage*	*b* *h* *v* *w* *beehive*	*p* *f* *pipe* *puff*

Fig. 7.





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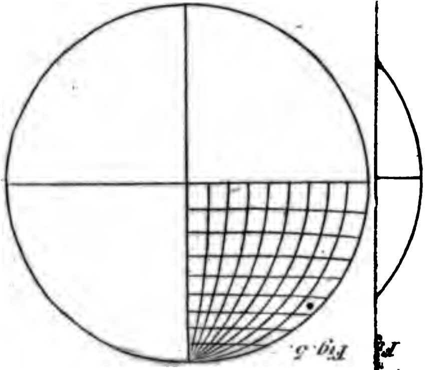


Fig. 5.

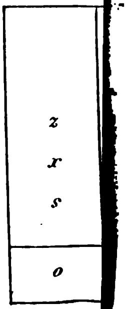
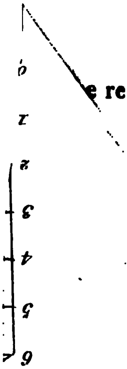


Plate I.

e quotient.

e re-



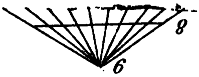
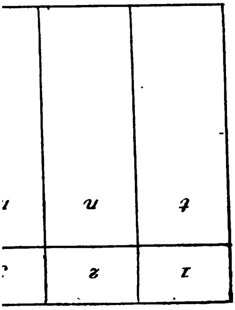


Fig. 6.



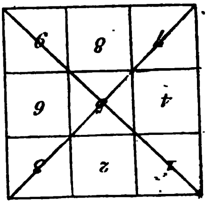
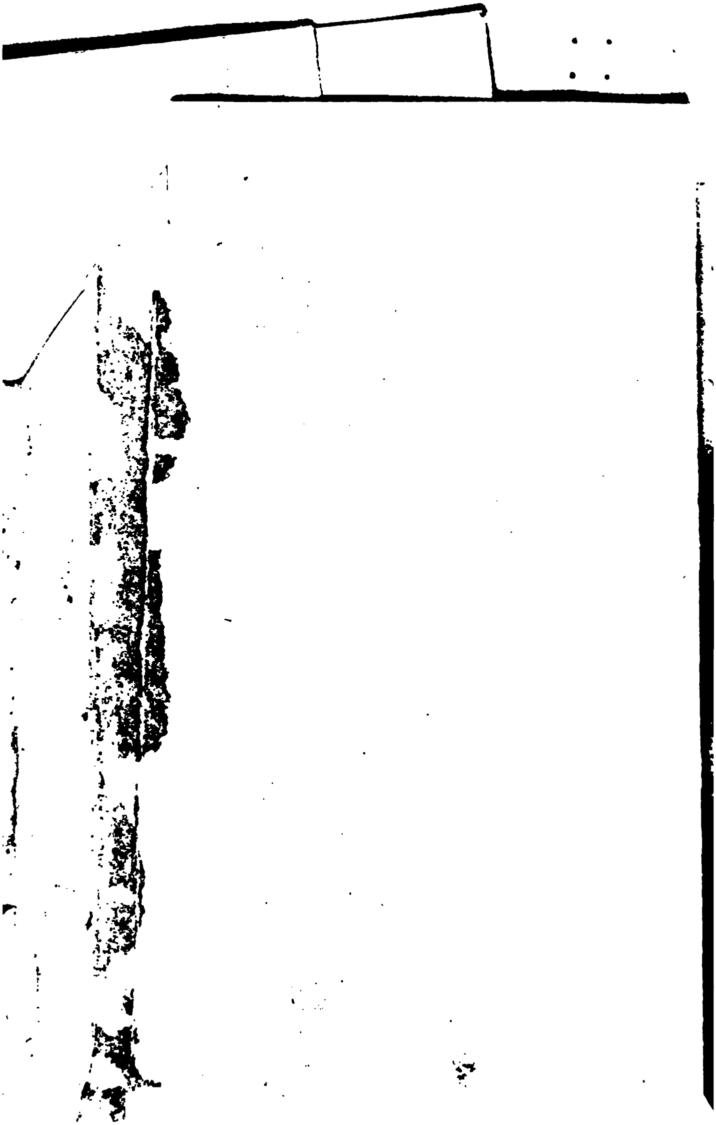


Fig. 1.



if we add this to 6, we have 9 the quotient. Divide 54 by 9.

$$\overset{1}{9})54(6$$

Subtracting the 9 from 10, and adding the remainder to 5, we have 6 the quotient.

so $\overset{4}{6})48(8$ $\overset{2}{8})72(9$ and so on.

And in cases where the dividend does not exactly contain the devisor, as in

$$\overset{1}{9})76(8$$

we find by multiplication, that 8 multiplied by 9 ives 72, we have then 4 over, which is conseuently 4 ninths.

“Thus in every case we have always the answer o the nearest whole number. Here also we ave no need of the multiplication table, which, s I said before, is so difficult to learn, as the umbers themselves give us the answer; it is in heir nature. You see then how easy it is to adance by our method, and we charge not the memory with what it is so difficult to fix.”

PRINCIPAL SYSTEMS

OF

Artificial Memory,

CHRONOLOGICALLY ARRANGED.

As many of the treatises on this subject are extremely rare, we shall give the title of each, and occasionally notice their contents; but we shall not attempt a particular analysis of the early books, as the same principles will be found amply developed in those of a more recent date, from which copious extracts are made. In some few instances, indeed, on account of its rarity, or usefulness, the whole work has been reprinted; and, a slight sketch of the author's life has, when practicable, been introduced. The articles thus noticed are all numbered; the books are chronologically arranged, according to the dates of their publication; and the MSS. are referred to that period in which their respective authors probably flourished.

1. *Thomæ Bradwardini Ars Memorativa. MS.*

This curious manuscript is No. 3744 in the *Sloane* Collection, preserved in the British Museum. It consists of three pages and a half of a small duodecimo size, and treats of places, and of images or symbols to be arranged in the places; and, is evidently an attempt, though a feeble one, to form a system of topical memory, according to the plan of the antients.

THOMAS BRADWARDIN was called the *Profound Doctor*, and was born in Sussex, about the beginning of the fourteenth century. He was educated at Merton College, Oxford, of which he was proctor in 1325. Being called to court by Stratford, archbishop of Canterbury, he was made confessor to Edward III. and presented with a canonry of Lincoln, and also with the chancellorship of St. Paul's, London. He accompanied the king in his warlike expeditions; and to his sanctity of life and pious prayers, the superstition of the age attributed much of the success attending the arms of that monarch. His writings were partly theological; and he appears to have been one of the most enlightened ecclesiastics of his age. He gained great credit by his mathematical works.

2. *Matheoli Perusini tractatus Artis Mememorativæ*, 8°. 1470. [bl. let.]

This work was often reprinted in subsequent years.

3. *Jacobi Publicii Ars Memorativa incipit feliciter*, 4°. [bl. let.]

4. *In nova mirabilique ac perfectissima Memoriæ Jacobi Publicii, prologus feliciter incipit*, 4°. [bl. let.]

These two articles are without date, place, or printer's name. PANZER* has arranged No. 3 among the books printed at Cologne, by *John Guldenschaff*, but does not assign any date to it. Publicius was the author of *Ars conficiendi epistolas Tulliano more*, printed in 1488; and of *Artis Oratoriæ Epitom. Ars Epistolaris et* ARS MEMORIÆ, printed in 1482. It is very probable, then, that the article under consideration, was printed before the year 1482, and afterwards reprinted with the two other tracts of Publicius. The *Ars Memorativa* seems to have been the fountain from which every successive writer has taken copious draughts. It treats of the arrangement of places and the combination of images. Several wood-cuts are given, of the most rude and grotesque description, representing the alphabet by symbols taken from the different objects. Since the above observations were written, we have seen the following notice of this rare and curious work in Mr. Beloe's *Anecdotes of Literature and scarce Books*:*

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* Annales Typographici, tom. I. p. 343. ed. Norimb. 1793.

This is a very curious and scarce book, which, as Mr. Douce is of opinion, was the earliest with wooden cuts, that was printed with moveable types.

Denis (I use, with his permission, the words of Mr. Douce) affirms, in his Supplement to Maittaire, that it was printed at Cologne. This opinion seems to be founded on the resemblance of its type to that which was used by Ulric Zell. The capital letters, however, are different from those in a copy of Petrarch's Historia Griselidis in the possession of Mr. Douce, as well as from the engraved specimen in Meerman, Tab. IX.

In the Catalogue of the Valliere Library, No. 1856, it is said to have been printed by J. Guldenschoff, of Mayence, but who, according to Maittaire, was of Cologne.

The volume consists of fourteen leaves, each page containing twenty-seven lines. The fol-

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* Vol. i. pp. 227—229.

7. *Incipit Ars Memoriæ venerabilis Baldouini Sabodiensis Medicæ Artis Doctoris Eximii*, 4°. *Paris.* [bl. let.]

This article is without date, place, or name of the printer. It is, in fact, a republication of Publicius, with some introductory rules, which are delivered in Latin hexameters, accompanied by a prosaic comment and exposition. *Manget*, in his *Bibliotheca Scriptorum Medicorum*,[*] has the following meagre information respecting this 'venerable and illustrious medical Doctor.' '*Baldovinus (Sabodiensis), De eo exstat, Ars memoriæ carmine cum glossis. Parisiis, in* 4°.'

8. *Fœnix Dnni Petri Rauenatis Memoriæ magistri*, 4°. *Venetiis*, 1491.

9. *Memoriæ Ars quæ Phœnix inscribitur*, 8°. *Paris*, 1544.

10. *Phœnix seu Artificiosa Memoria Cl. I. V. D. et militis D. Petri Ravennatis Juris Canonici olim in Patavino Gymnasio Professoris celeberrimi*, 4°. *Vicentiæ*, 1600.

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[*] Tom. I. p. 224.

In this work, [Nos. 8, 9, 10.] the places and images are noticed at large, with various rules for forming, arranging, and combining them. If we would remember, says Peter, any particular circumstances, we must form some vivid imagination of the event, and associate it with the names of some "pretty girls" of our acquaintance!!! I would wish him that is *melancholy*, (says Burton) to study Cosmus Rosselius, *Peter Ravennas*, and Schenckelius Detectus.

11. *Jacobi Colinæi Campani de Memoria Artificiosa compendiosum opusculum. Impressit Ascensius*, 4°. [*Paris*] 1515. *Venundatur in Aedibus Ascensianis.* [bl. let]

12. *Nicholai Chappusii de mente et memoria libellus utilissimus*, 4°. [*Paris*] 1515. *Venundatur ubi impressus: est in Aedibus Ascensianis.* [bl. let.]

The two preceding articles are little more than a repetition of the scheme of Peter of Ravenna, with some observations on the theory of natural memory. They are both beautiful specimens of early typography, and have in the title a large colophon [in wood] representing a room of a printing office, in which are a compositor at work, a press, a man laying on the ink, and another working the press.

13. *Congestorium Artificiosæ Memoriæ Joannis Romberch de Kyrpse;—opus omnibus Theologis, predicatoribus; confessoribus, advocatis et notariis; medicis, philosophis; Arti liberalium professoribus. Insuper mercatoribus, nuntiis, et tabellariis pernecessarium,* 8°. *Venetiis, per Melch. Sessa,* 1533. [bl. let.]

This work abounds with the most curious woodcuts: according to the title, it is intended for divines, preachers, confessors, advocates, notaries, physicians, philosophers, and professors of the liberal arts: it is also very necessary for merchants, messengers, and amanuenses. The author speaks of natural memory, its seat, etc. and illustrates his observations by the representation of a head, on which the situations of thought, fancy, etc. are laid down with great care. After having treated of the necessity and use of places, and images, of visible places and fictitious places; the author recommends the fixing of certain places upon the walls of the different rooms of a house, monastery, or other place: and, the better to remember the situation of the places, puts *symbols* there. A wood-cut is given with the symbols for figures as high as 30, many of which represent very accurately the outline of the figure. The *alphabet* is represented in the same way by symbols; and, in one instance, entirely by birds of different species.

In speaking of languages, in order to fix the numbers and cases of nouns in the mind of the pupil, M. Romberch resorts to the following expedient. A naked man is to *personate* the singular number; the nominative case is to be placed on the head of this man, the genitive in his right hand, the dative in his left, the accusative on his breast, the vocative on his middle, and the ablative on his knees. A man clothed gives the plural number, and the cases are to be disposed in the same manner, as on the naked man. Two chapters are devoted to the *merchants;* in the one, they are instructed to remember the weight and measure of their goods; and in the other, the debts owing to them, the bills which they have to pay, etc. etc. Three chapters are dedicated to *gaming;* one explains the application of the art to dice, another to cards, and the last to chess.

Another edition of Romberch's *Congestorium* was published at Franckfort, in 1602, 8°. *Lodovico Dolci* translated this book into Italian, but gave it a dialogue form; it was printed at Venice, in 8°. 1562.

14. *De Memoria reparanda, augenda, servandaque lib. unus; et de locali vel artificiosa Memoria lib. alter Guill. Grataroli,* 8°. *Romæ,* 1555.

A prior edition of this treatise was printed at Basle in 1554, with Grataroli's *Opuscula,* which were all corrected by himself. Many other editions following, and a translation into English was made by *William Fulwod* under the following title.

15. *The Castel of Memorie: wherein is conteyned the restoring, augmenting, and conseruinge of the Memorie and Remembrance, with the safest remedies, and best precepts thereunto in any wise apperteining: made by Gulielmus Gratarolus Bergomatis Doctor of Artes and Physike. Englyshed by William Fulwod. The Contentes wherof appear in the Page next following. Imprinted at London in Fleete-streete by William How, dwelling at Temple barre.* [bl. let.]

An earlier edition of this extremely rare book is noticed in the *Censura Literaria*.* After the line in the title of this edition, 'The contentes,' etc. there is a cut of the Printer's sign with the motto *post tenebras lux*. 'Printed at London by Rouland Hall, dwellynge in Gutter-lane, at the signe of the Half Egle and the Keye, 1562, 12°.' The address to the reader is dated Nov. 20, 1562. The date to the edition from which our extracts have been made, is placed at the end of the 'address,' and is Nov. 20, 1573.

An Epistle 'dedicatorie' to Lord Dudley, 'Maister of the Queenes Maiesties horse,' follows the title. This epistle is in verse, very prolix and dull. After a studied eulogy on his patron, Mr. Fulwod enlarges upon the importance of memory, particularly to the Judge, Preacher, Captaine, Marchaunt, Lawyer, and Husbandman, and shrewdly observes,

For what helps it good bookes to reade,
  or noble stories large:
Excepte a perfecte Memorie,
  do take thereof the charge?

What profits it most worthy thing
  to see, or else to heare:
If that the same come in at one,
  and out at the other eare?

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* Vol. vii. p. 209.

An address from the translator to the reader, concludes with this sage admonition, *lege et perlege, ne quid temere.* In the next place we have,

THE BOOKES

Verdicte.

A Castell strong I doe present
  well furnished and sure:
Munited eke with Armoure bent
  For euer to endure.

Which hitherto long time hath ben
  In (Limbo patrum) hidde,
But now at last may here bee seene,
  From daungers men to ridde:

Procuring them a perfect state,*
  And safe securitie,
Whereby they may fynde out the gate
  Of wisedome's lore. For why?

Hee that hath lost his Memorie,
  By mee may it renewe:
And hee that wyll it amplifie,
  Shall find instructions trewe.

And hee that will still keepe the same,
  That it shall not decay:
By mee must learne the way to frame,
  And my preceptes obey.

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* Sapi. 6, 8. and 18.

Lo here yee see my full effecte:
And that I doe entende
The secretes therof to detect,
That thereby wittes may mende.

Then Iudge mee,
As I am worthie.

The *Castel of Memorie* is divided into seven chapters. The first '*declareth what memorie is, where it flourisheth, how profitable and necessarie it is.*' The second '*conteineth the chiefe causes wherby the memorie is hurt, with their signes and cures:*' and, in treating of moist and cold brains, concerning the 'meates forbidden the pacient,' there are the following curious directions:'

"Let them also forbeare Marow (which is in bones) Cranes fleshe, fishe, especially if it be clammy and nourished in diches or holes, colde pot herbes, milke, cheese, especially much, or naughtie: fruites moist and not ripe or often but sometimes they maye eate sharper or tartar meates, chiefly in the winter, as Garlike, Peniroyall, or Calamint, Capers being watered; mustard is praised of Pithagoras, they must eate little and speciallye at supper: they must drink no water, except it be sod with hony, or cinnamon, or some other pleasant spices. They must abstein from ouer mutch sleepe, and not to sleepe in the daye time, nor upon the noddle of the head, nor upon to mutch fulnes of meate: let them also take heede of ouer great watchinges, for it weakeneth the spirite, and resolueth it, and stuffeth the head."

The third chapter '*sheweth the principall endamages of the memorie in what sorte, so euer they bee.*' The fourth '*telleth lykewise the perticular helpes of the Memorie.*' The fifth '*comprehendeth certain best approued and chosen medicinable compounded remedies and preseruatiues greatly encreasing the Memory;*' and containeth a receipt to make 'Pilles that are good for a languishing braine, especially in aged and olde folkes,' 'an odoriferous or sweet smelling aple for the memorie'—'a comforting water or lee, for the washing of a colde and moist head, also it helpeth the Memorie, and it must be of the ashes of Twigges, or of an oake.'—*Another*, and *another* follow. The sixth chapter '*expresseth Philosophicall Judgements, Rules, and Preceptes of Remembrance;*' these are twenty in number; the nineteenth is as follows:

"For the recreation of your mynde and the restorin of your strengthes, you must not flye to fylthie and dishonest things, but you shall bring it to passe by changing of your studie: for it is better somewhat to refresh your mynde, then altogether to lose it. Yea, also the plaies, pastimes or enterludes of Christians ought to be sage and honest. Therefore after earneste and graue studies you muste repaire to lighter and easier, as to Histories or Musicall exercises, for it restoreth the strength and norisheth the conuenient reste, and also vertue is of more power after leasure and rest. There be some that had rather play, the which indeede is graunted and permitted, so that the playe bee a play and not an earnest or said thinge, and let it be shorte, honest, without deceite hurt or couetousness. The Chestes playe (a Treatise whereof I lately translated into Englishe) doth moue and stire up the wit, but in the same is often bestowed to much tyme and studye, the which ought to be better applied. The baule or Tenyce play, doth aslo profite the hole bodye (But above all the noble exercise of Shooting in the long Bowe is most commendable) walking abroad is good chieflye for the heade; but it is better to dispute together walking up and downe and mouing the handes. This recreacion of the minde ought not to be daily nor often, and especially it must not be used at the hours or tyme of study."

The seventh chapter '*entreateth in fevve woordes of locall or artificiall Memorie.*'

"Artificiall Memorie is a disposyn or placing of sensible thinges in the mynde by imagination, whereunto the naturall memorie hauing respect, is by them admonished, that it may be hable to call to mind more easely and distinctly suche thinges as are to bee remembred: and (as *Cicero* sayth in hys seconde to *Herennius)* it consisteth of places, as it were of waxe or tables, and of images, as of figures and letters. For so it commeth to passe that such thinges, as we haue heard or learned, we reherse agayne, euen as though we read them. Nor it skilleth not muche whether we begynne at the first, or at the laste. The places themselves must be set in order, for, yf there be a confusion in them, it foloweth of necessitie, that al the reste must be disordred. And it behoueth also that there be many places, that manye thinges maye be placed by the same exercise and practise. *Cicero* judged that there should be an hundreth in number. *Thomas Aquinas* thought it good to have mo. [more.] For these places many have searched by diuers and sundry artes. *Metrodorus* found oute three hundred and sixtie places of the XII signes in the whiche, the sunne goeth his course: because the Astrologers do deuyde the Zodiacke into so manye degrees.

“ *Cicero* inuented a certayne familiar house, seuered or parted into manye places, and he thought it good that we shoulde deuise after euerye fyfte place, either a golden hande or some other distinction, wherby the one might be discerned from the other, and also in them to obserue a stedfast and unmouable order, that wee might always enter in and go out at the right syde. Another Author, not unskillful, fayned places by certayne lyuing creatures, and deriued their order out of the Latyne alphabet, in suche sorte that euery one of their names shoulde beginne with some one of euery letter: euen as if these were the names: an Asse, a Beare, a Cat, a Dogge, an Elephant, a Foxe, a Goate, a Horse, a Jaye, a Kyte, a Lyon, a Mule, a Nyghtingale, an Oule, a Partridge, a Quaile, a Rabbet, a Sheepe, a Throstle, a Unicorne, Xystus the Philosopher (who wrote of these) Hyena, Zacheus. He deuyded all these into fyue places: into the heade, into the fore feete, into the bealye, into the hynder feete and the tayle, for this order nature herself ministreth, neither can the wit be confounded in counting or reckenning them. Hauing thus gotten then an hundredth and fyftene places, he graued in them the Images of thinges worthye of memorie, and also he commaunded that many thinges should bee written by the mynde or wit in the face of him that speaketh, in the heares, in the forehead, in the eyes, and so to descend downewarde to the feete. But me thynketh it a verye easye thinge to deuise and immagine not onlye an hundreth but also infinite places, seeing no man is ignorant of the situation of the citie where he was borne, or in the which he hath long dwelled.

" Therefore when the mynde entreth in at the gate, whiles it considereth the diuersitie of wayes, directing and leading to diuers countreyes, and whiles it remembreth frendes houses, publike dwellinge places, palaces, or common places of Judgment, it shall fynde out a maruelous number of places. Hereto also it maye imagine great courtes, or places of larger roume, wherein it may deuise as great a number of places as it listeth, so that euery thing may be written therein that he will have.

" And because the teaching by examples is briefe and effectuall, nowe will I put forth some examples, to the end that thereby the matter may be the better perceiued. I will put forth an example of tenne, and consequently by the proportion thereof shall be deuised the example of a thousand.

" And therefore I take or choose a greate and emptie house, to the which you must not go often but seldome, and appointe or sette the fyrst place which is at the doore, three foot distant from the doore. Let the seconde place be twelve or fyftenne foot distant from that, as for example let there be one corner or angle. Let the thyrd place be distant from the seconde even as many or twelve foot, and there may be perchance, another corner, or a middest betwene the first and the second corner. The fourth shall be a corner. The fyft shall be a corner, distant by as muche. The syxte likewyse: and the hall beyng finished, you shall enter into one chamber, and immediately within the doore you shall note or appoynte the seuenthe, and afterwarde, in the fyrst corner of the chamber the eyght, and in the second corner the nynth, and in the thyrd the tenth with his distaunce. And yf you wyll haue any more places, goe out of the chamber, and so marke or note the other chambers proportionally.

" But yet remember that the dystaunce whych is geuen is moderate and conuenyent, but yf there be not found so great dystaunce, but a lesser euen unto eyghte, or to lesse even unto fiue foote, yet should it be tolerable. As concernynge the temple, it ought to be such a one as must not be much frequented, especially of yourself to the ende that you be not confounded or troubled with the multitude of the fygures or Images. These places ought to be memorable and remoueable with ones hand, for the corners are not places, but fyxed images sette and placed in the corners, uppon the which (euen as upon paper) are painted other fygures, which may be put out euen as letter upon paper. As for example, the firste place is marked or known by * * * in setting * * * in his place. The second by a salue boxe, setting there also a salue boxe. The iii by a morter putting it there. The fourth by a pestle. The fyfte by a pair of writing Tables. The sixte by a hares foote. The seuenth by a Searcer. The eight by a bagge. The ninth by a lofe of waxe. The tenth by the Canes of *Cassia*. And these names must be kepte alwaies in mynd and the places from fiue to fiue, that the quinaries or fyfte places may alwaies by had in memorie. Of the distance there is enough spoken. Yet note that you may pass to fiue and thirtie, and not beyonde, lest there should chaunce a negation in the images.

" And bee it spoken euen likewise of the quantitie as touching the height, that there be not manye of a height, but from fyue euen unto eleuen foote. And let euery fyftie place be marked, as it is sayde of the order. The qualitie also must be noted, that they be not to light, nor to darke, nor to much frequented. Let us come to the Images which are the thinges that must be places: the Images whiche bee known unto us ought to be so set in these places with such mouinges, that by them we may call thinges to remembraunce. For example, I would remember twentye names, I will do thus: In the fyrste place, I will set the Images of Peter, one whom I well knowe, with an * * * full of water in hys hande, the whyche he shall power upon James one also well known unto me: and so by this notable act, I shall remember these twoo, and so place in my remembraunce these tweo names.

"In the seconde place I wyll put Henrye who is unto mee verye well knowen (for these fygures must be exactly knowen that they maye quickelye come into ones Memorye) who shall put his hande into a Boxe and pull out the salue, and therwithal to besmyer Steuen, one also whom I do very well know.

"In the thyrde place I will set Wylliam, one whome I knowe also, who shall take out of the morter a playster, and shall put it upon Fraunces face: or inuentinge some other mad jestes and toyes, whereby the memorye may bee confyrmed to beare awaye suche lyke names.

"And so in lyke manner proceede with the rest.*

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* As the original passage has not, here, been *literally* translated, we shall present our readers with a specimen of Grataroli's Latin.—" Transeamus ad imagines, quæ sunt res collocandæ: debent ita imagines nobis notæ in istis locis collocari cum motibus talibus, ut per eas valeamus memorari. Verbi gratia, volo memorari de viginti nominibus, sic faciam: in *primo loco* imaginem Petri mihi notissimi locabo, cum urinali in manu pleno urina quam fundet super Iacobum mihi notissimum: et ex isto actu

"Lykewise if I would remember any man and also his acte, I will imagin him and the doyng of his acte; as if I would remember one eating of figges, then I will imagine that with a figge, he did some mery or strange thing.

Grataroli next treats of figures, and gives the five following rules concerning them.

"The *fyrste* is that the fygure do moue either to laughter, compassion, or admiracion, for one may soone fynde a figure that styre up and moue the affection of the Soule.

"An example hereof is this, if I should sette or place in the mouthe of a mad Ass, the head of Antonye to be almoste bytten in pieces, the blood to gushe out of him, and that he asketh helpe, and holdynge up his handes cryeth out: for it cannot bee but that when I would, I shoulde see him with the eyes of my mynde, and

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notabili, horum duorum memorabor: et sic duorum nominum memoriam mihi fecero. In *secundo loco* ponam Martinum mihi notissimum (nam oportet imagines istas esse notissimas, ut cito in memoriam recurrant) qui ponet digitum suum in pyxide et extrahet unguentum, quo cum digito orificium unget ani Henrici mihi notissimi. In *tertio* ponam Andream mihi itidem notum, qui cum manu ex mortario extrahet emplastrum quod ponet super faciem Francisci, vel alios ridiculos actus fabricando, ex quibus memoria de talibus nominibus confirmetur. Et ita pariformiter procedatur in aliis."—*Gratarolus de Memoriâ*; OPUSC. pp. 66, 67. *Basil* 1554.

declare or express Antony to him that should ask or enquire for him.

" *Another* is, that we should represent eyther the lyke by the like, or by the contrary, or else by the proprietie therof. An example of the fyrst is, as if I were about to place the name of *Galene,* I should write the name of some other excellent physition, whose authoritie (as neere as may be) is eyther equall or lyttle inferiour.

" An example of the *seconde* is, if I writ the name of an unlerned physition, if I describe *Thersites,* by *Achilles,* and the good for the euill; or the foule by the fayre.

" An example of the *thyrde* is, yf I represent *Ouidious Naso,* by a great nose: *Plato,* by large shoulders, *Crispus* by crysped or curled heares; and *Cicero* by *Gelasinus.*

" The *thyrde* is, that wee accustome ourselues to place thinges, euen from our very youth, and that we encrease with dayly exercise: although that the teaching therof may helpe and profit euen them also that be elder.

" The habite, the perfectnes and dexteritye (I meane to practyse these thynges) is muche the more, if they doe so place all thynges, whiche they shall either saye or do and also whatsoeuer they heare in communication or talkinge. And they must lykewise paynt and graue the maners, gestures and tymes. For in so doynge they shall in a shorte space be notably well exercised. It profyteth also to playe one with another, and to goe about to excell hym that shall recyte many thynges, more clearlye, orderlye, and spedely then other.

“ The *fourth* is that (in euery quinary or fyft number of those thynges that are to be marked) we repeat agayne from the beginninge all such thynges as are alreadye noted for the repeticion of things commonlye bryngeth greate utilitie and profyte.

“ The *fyfte* is, that wee should represent thynges compounde with the scimilitude of simple thynges. As for example. Hee that will remember this sentence: *Cicero* contendeth with *Hortensius*, shall immagine the pease called *Cicer* whiche complayneth of the barenes of the garden: for so doth *Cicer* resemble *Cicero* and the Garden called *Hortus* doth represent *Hortensius*, and the complaynte the contention, etc. etc.

“ Agayne you shall not forget that in placyng or setting of the images or fygures in their places the thynge is alwayes to bee placed with a merye, a merueylous or cruell acte, or some other unaccustomed maner: for merye, cruell, iniurious, meruelous, excellently fayre, or exceedinglye foule thynges do chaunge and moue the sences, and better styrre uppe the memorye, when the mynde is muche occupied about suche thinges.

"Also the images are varyed by the transposition and transumption of the letters: as if I woulde remember Nep,* I shall place a pen, and for a tyran, [Tyrant] a rauening wolf. It sufficeth therefore, that we have expressed a methode or compendious waye, the whiche whosoeuer foloweth shall easelye (so that exercise be not lackynge) get and attayne the certeine and sure remembrance, of manye and sundrye thinges, as due occasion shall require: but as for the sluggish and ydle, let them slugge and sleepe still, to whom all thinges are displeasing."

At the conclusion of the seventh chapter '*is put an Epilogue of the foresayde thinges.*' This epilogue contains quotations from Erasmus, Plato, and Aristotle, and concludes thus:

"It is verye good also to renewe and rehearse verye often suche thinges as are commytted to the memorye, with an elegant Oration or a sweete songe, as it is heretofore declared, for pleasure is the sauce of thynges, the foode of love, the quickening of the wyt, the nouryshynge of the affection and the strength of the Memorye.

"The Soule also must be purged from

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* A Herbe so called.

euill thinges, that it may be filled with good thinges.

"And we must humbly desire of God with a faythfull prayer to grant us his spyrtyre of wysedome and knowledge, for our Lord Jesus Christes sake, to whome wyth the father and the holy ghost be all honor, laud, and glorye for euer and euer. Amen."

On the back of the last leaf, Memory taketh leave of her disciples with the following admonition.

Memorie sayeth.

To him that would me gladly gaine
These three precepts shall not be vaine.
The first is well to vnderstand
The thing that he doth take in hand.
The second is the same to place
In order good and formed race,
The thirde, is often to repeat
The thing that he would not forgeat.
Adioning to this castell strong,
Great vertue comes er it be long.

A French translation of Grataroli's Treatise, on the Memory and on Physiognomy, is extant; the following is the title as given by De Bure, and it is remarkable that this is the *only* book which he has admitted under the head of *Natural* and Artificial Memory.

16. *Discours notables des moyens pour conserver et augmenter la memoire, avec un Traite de la Physionomie ou Jugement de la nature des hommes tire des traits du visage, et autres parties du corps; trad. du Latin de Guill. Gratarol, par Estienne Cope,* 16°. *Lyon*, 1586.

Of this book De Bure says, '*Petit Traité singulier, et assez recherché.*' And CAILLEAU in his *Dict. Bibliog.* '*Petit Traité singulier et peu commun.*—'*On préfère cette Traduction à l'original Latin.*'

WILLIAM GRATAROLI was born at Bergamo in Italy, in the year 1510. He was educated at Padua, where he took the degree of Doctor of Physic, and afterwards became Professor of the same science, and gained considerable distinction. But, having embraced the Calvinistic doctrines on the persuasion of Peter Vermilli, he fled from Italy through fear of the inquisition, and retired to Marpurg, where he taught medicine for a year. He was, however, compelled to leave that place also, and repaired to Basle, in the hope of a better fortune, and where, in fact, he taught and practised his profession with success, until May 1562, when he died at the age of 52. He was author of a great number of works, some of which are honorable to his talents, and evince a large share of knowledge, but in others he shows an attachment to the absurdities of the alchemist, much superstition, and opinions which do not imply a sound judgment. His works, besides those which we have had occasion to mention, were, I. *A Treatise on the Preservation of the Health of Magistrates, Travellers, and Students*, in Latin, published at Frankfort, in 1591, in 12°.—II. *De Vini Natura.* Cologne, 1671, in 8°.—III. He was the editor of a collection of various works of Pomponatius: Basle, 1565, in 8°. He had been the pupil of this celebrated man, and adopted some of his notions.—IV. *Veræ Alchymiæ Artisque Metallicæ Doctrinæ, etc. fol. Basil,* 1551.—V. *De prædictione rerum naturarumque hominum etc.*—VI. *De Temporum omnimoda mutatione, etc.*[*]

"It cannot be denied (says Bayle) that Grataroli was a public-spirited man, since he not only sought remedies that he might be useful to magistrates, but also those that are proper for all sorts of travellers. He did not forget studious men; for he endeavoured to enable them to preserve their health, and strengthen their memory. *A man, who would supply their necessities on*

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[*] Bayle—Dict. Hist. art. *Grataroli.*

this account, would deserve divine honors in the republic of letters, in which MEMORY *is almost as necessary as* LIFE."

17. *Artificiosæ Memoriæ libellus autore Joann. Spangenberg, Herd.* 8°, *Witeberg*, 1570.

18. *Artis Memoriæ, seu potius Reminiscentiæ pars secunda, Authore Joh. Sp. Herd. Francof.* 1603.

This is a very useful manual, and is intended principally for tyros in the art. It unfolds, by question and answer, the principles of former writers on the subject, and is equally remarkable for perspicuity and brevity. This small tract is included in the *Gazophylacium Artis Memoriæ*, published in 1610, under the title of *Erotemata de Arte Memoriæ seu Reminiscentiæ, etc.*

19. *Cosmi Rosselii Thesaurus Artificiosæ Memoriæ*, 4°. *Venet.* 1574.

20. *Jordano Bruno de umbris Idearum, Paris*, 1582.

21. *Artificiosæ Memoriæ Libellus Authore Thoma Watsono Oxoniensi,*

Juris Utriusque studioso. ***MS.*** **1583.**

This manuscript is No. 3731 in the *Sloane* Collection, preserved in the British Museum. It is divided into fifteen chapters, the titles of which are,

1. *Autoris Prologomenon et Methodus.* 2. *De Memoria et Reminiscentia.* 3. *De Memoria Naturali.* 4. *De Artificiosa Memoria.* 5. *De Duplici locorum genere.* 6. *De Legibus locorum.* 7. *De Imaginibus.* 8. *De Imagine rei simplici.* 9. *De Imagine rei compositæ.* 10. *Quales esse debeant imagines.* 11. *De Cathena.* 12. *De Verborum memoria.* 13. *De praxi artis memorativæ et objectorum varietate.* 14. *De Utilitate localis memoriæ.* 15. *De hujus artis acquisitione.*

If I wish to remember five objects, (says Mr. Watson) as a stone, a tree, a fish, a bird, and a horse, I take some spacious wall well known to me, and make five great divisions; in the first, I see a door; in the second, a window; in the third, a chest; in the fourth, an iron hook; in the fifth, a large crack, or fissure. The stone must be large enough to fill up the whole doorway; the tree has taken root, and almost conceals the window by its branches; the fish is lying hid in the chest; the bird is seizing the iron-hook with his beak, and is endeavouring to tear it from the wall; the horse has put his tail into the fissure, and is fixed there. By these means, the objects, and their numerical situation are permanently remembered: other divisions of a wall are given; one into 32, and the other into 100 compartments; the first is reckoned by eights, and the latter by tens.

The *connection* of the different images is considered of great importance, and the following illustration is given. If I wish to remember (continues the author) a man, a horse, a stone, a fire, a hog, and a tree, I must say, that the *man* finds a *horse* and seizes it by the tail; the horse is biting a large *stone*, from which fire is elicited by the teeth of the animal; this fire burns a *hog*, which had approached too near the horse; the hog, mad with pain, runs against the *tree*, and overthrows it.

ANTHONY WOOD, in his *Athenæ Oxonienses*,* affords some information respecting this author.

" THOMAS WATSON, a *Londoner* born, did spend some time in this University, not in Logic and Philosophy, as he ought to have done; but in the smooth and pleasant studies of poetry and romance, whereby he obtained an honourable name among the students in those faculties. Afterwards retiring to the metropolis [he] studied the common law at riper years, and for a diversion wrote, *Ecloga in obitum D. Francisci Walsingham Esq. aur.* Lond. 1590. *Amintæ Gaudia,* Lond. 1592, written in *Lat. Hexameter,* and dedicated to the incomparable *Mary* Countess of *Pembroke,* who was a patroness of his studies. He hath written other things of that nature, or strain, and something pertaining to pastoral, which I have not yet seen, and was highly valued among ingenious men, in the latter end of Q. Elizabeth."

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* Vol. I. col. 262, 263.

22. *Jordano Bruno de Imaginum, et Idearum compositione ad omnia inventionem, et Memoriæ genera tres libri,* 8°. *Franc.* 1591.

23. *Joan. Mich. Alberti de omnibus ingeniis augendæ memoriæ liber,* 4°. *Bonon.* 1591.

24. *F. Philippi Gesvaldi Plutosofia, Patav.* 1600.

25. *Ars Reminiscendi Joan. Baptistæ Portæ Neapolitani*, 4°. *Neap*. 1602.

Porta, like the authors already noticed, treats of places and images; he also advises the pupil to commit poetry to memory, by forming ideal representations of the language, and placing them in order. He exchanges figures for symbols, and represents a cipher for a globe; 1 by a knife; 2 by a sickle; 3 by a bow; 4 by a chopper; 5 by a serpent; 8 by a pair of spectacles; 9 by a crosier, etc. etc. Letters are also represented by symbols, and two alphabets are given; in the one, the letters are formed from various objects; and in the other, from different positions of the human body.

JOHN BAPTIST PORTA was a Neapolitan gentleman, who acquired celebrity by his application to polite literature and the sciences, especially those of mathematics, medicine, and natural history. He often held at his house meetings of literati, when they discussed the chimerical secrets of magic. The Court of Rome, apprised of the object pursued by this little academy, prohibited him from holding its meetings. Porta then cultivated the Muses, and composed several tragedies and comedies, which were received with some success. His house was always the retreat of men of letters, and of foreigners, who admired the merit of Porta. He died in 1515, aged 70 years. We are indebted to Porta for the invention of the Camera Obscura. His works are, 1. A Treatise on Natural Magic. 2. A Treatise on Physiognomy. 3. *De occultis Litterarum notis;* a treatise on the art of concealing our thoughts in writing, or of discovering those of others. 4. *Phytognomonica, seu Methodus cognoscendi ex inspectione vires abditas cujuscumque rei.* 5. *De Distillationibus.*[*]

26. *F. Hieronymi Marafioti Polistinensis Calabri Theologi De Arte Reminiscentiæ, per loca, et imagines, de per notus et figuras in manibus positas,* 8°. *Franc.* 1602.

Places and images are the basis of Marafioti's system, but instead of putting the images upon the walls of a house, they are placed in different parts of the hands, both on the back and in the palm of the hand. By this mode a high number of places and images is obtained. This tract was reprinted in 1610, in the *Gazaphylacium Artis Memoriæ.*

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[*] Dict. Hist. art. *Porta.*

27. *Specimina duo Artis Memoriæ exhibita Lutetiæ Parisiorum,* 8°. *Paris,* 1607.

This tract we have not seen, but suspect that it contains an account of Schenckel's experiments in Mnemonics at Paris; of whose system some account will be found in the next article.

28. *Schenckelii Methodus de Latina Lingua intra* 6 *menses docenda,* 8°. *Argent.* 1609.

29. *Gazophylacium Artis Memoriæ; in quo duobus libris omnia et singula ea quæ ad absolutam hujus cognitionem inserviunt, recondita habentur, per Lambertum Schenckelium Dusilvium. His accesserunt de eadem Arte Memoriæ adhuc* 3 *opuscula; quorum* 1. *Joannis Austriaci.* 2. *Hieronymi Marafioti.* 3. *Joh. Sp. Herd.* 8°. *Argent.* 1610.

30. *Schenckelius detectus: seu, Memoria Artificialis hactenus occultata ac a multis quamdiu desiderata: nunc*

primum in gratiam optimarum artium, ac sapientiæ studiosorum luce donata,, a J. P. G. [Joh. Paep. Galbaicus] S. P. D. Hanc artem principes et alii nobiles, cum Ecclesiastici, tum seculares addidicerunt, exercuerunt et mirifice probarunt, ut ex sequentibus notum fiet. 8°. *Lugduni,* 1617.

31. *Brevis Delineatio de utilitatibus et effectibus admirabilibus Artis Memoriæ,* 12°. *Venet.* [*circ.* 1610.]

32. *Memoria artificialis Lamberti Schenckely. Omnibus literarum et sapientiæ amantibus luci donata, vna cum clauicula Illam legendi, modum aperiente. Arnoldi Backhusy Lubecensis,* 12°. *Colon.—Agrip.* 1643.

No. 28, Schenckel's method of learning the Latin language in six months, we have not seen. No. 29, contains Schenckel's Art of Memory, and very considerable prolegomena which are not inserted in any subsequent reprint. No. 30,

is Schenckel's system only, without any introduction. The two last treatises are perfectly useless to the uninitiated, on account of the arbitrary signs and marks employed in them.* No. 31, is a reprint of No. 30, with the addition of a *key* which explains the arbitrary signs used in the work. It also contains a dedication to the learned Meibomius, and an address to the reader. This, consequently, is the most useful edition for practical purposes. No. 31, is a treatise by *Martin Sommer*, a contemporary and delegate of Schenckel. It is reprinted in No. 29, the *Gazophylacium*, and forms a part of the introduction to that work.

LAMBERT, or *Lamprecht* SCHENCKEL, born at Bois-le-Duc, in 1547, was the son of an apothecary and philologist. He went through his academical course at Lyons and Cologne, and afterwards became a teacher of rhetoric, prosody, and gymnastics, at Paris, Antwerp, Malines, and Rouen: not forgetting, as the custom of the age required, to claim his title to scholarship, by writing Latin verses. From these, however, he acquired no celebrity proportionate to that which was reared on his discoveries in the Mnemonic Art. The more effectually to propagate these discoveries, he travelled through the Netherlands, Germany, and France; where his method was inspected by the great, and transmitted from one university to another. Applause followed every where at his heels. Princes and nobles, ecclesiastics and laymen, alike took soundings of his depth; and Schenckel brought himself through every ordeal, to the astonishment and admiration of his judges. The rector of the Sorbonne, at Paris, having previously made trial of his merits, permitted him to teach his science at the university; and Marillon, Maitre de Requêtes, having done the same, gave him an exclusive privilege for practising Mnemonics throughout the French dominions. His auditors were, however, prohibited from communicating this art to others, under a severe penalty. As his time now became too precious to admit of his making circuits, he delegated this branch of his patent to the licentiate *Martin Sommer*, and invested him with a regular diploma, as his plenipotentiary for circulating his art, under certain stipulations, through Germany, France, Italy, Spain, and the neighbouring countries. Sommer now first published a Latin treatise on this subject, which he dispersed in every place he visited. [No. 31.] In this he announces himself as commissioned by Schenckel, to instruct the whole world.

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* The *Gazophylacium*, however, is valuable on account of the prefatory matter, and the three tracts which it contains; more particularly, as the original editions of the tracts are extremely rare. See *Monthly Magazine*, for Feb. 1810, for some part of this account.

" A lawyer, (says he) who has a hundred causes and more to conduct, by the assistance of my Mnemonics, may stamp them so strongly on his memory, that he will know in what wise to answer each client, in any order, and at any hour, with as much precision, as if he had but just perused his brief. And in pleading, he will not only have the evidence and reasonings of his own party, at his fingers' ends, but all the grounds and refutations of his antagonist also! Let a man go into a library, and read one book after another, yet shall he be able to write down every sentence of what he has read, many days after at home. The proficient in this science can dictate matters of the most opposite nature, to ten, or thirty writers, alternately. After four weeks' exercise he will be able to class twenty-five thousand disarranged portraits within the saying of a paternoster:—aye, and he will do this ten times a day, without extraordinary exertion, and with more precision than another, who is ignorant of the art, can do it in a whole year! He will no longer stand in need of a library for referring to. This course of study may be completed in nine days,—and an hour's practice daily, will be sufficient: but, when the rules are once acquired, they require but half an hour's exercise daily. Every pupil, who has afterwards well-grounded complaints to allege, shall not only have the premium paid in the first instance, returned to him, but an addition will be made to it. The professor of this art, makes but a short stay in every place. When called upon, he will submit proofs, adduce testimonials from the most eminent characters, and surprise the ignorant, after four or six lessons, with the most incredible displays." Here follow testimonials from the most celebrated universities. Nine alone are produced from learned men at Leipzic, and precede others from Marpurg, and Frankfort on the Oder.

On the 29th and 30th of Sept. and on the 1st of Oct. [O. S.] 1602, Schenckel exhibited some specimens of his art at Marpurg in Hesse.* the first experiment took place on the 29th of Sept. at eight o'clock in the morning, before a large assemblage of Divines, Lawyers, Physicians, and Philosophers. Schenckel having requested some one to dictate 25 Latin sentences, he wrote them down with a pen, and numbered them. He next read them aloud twice, with scarcely any pause, and having sat for a short time in silence, he repeated the whole, from beginning to end, backwards and forwards, and in any order desired, without the slightest hesitation. It happened, however, that once or twice, Schenckel substituted one word for another, as, *limits* for *ends;* but being reminded of this, he immediately gave the word required. Afterwards, any particular number being given, he repeated its appropriate sentence; and, on the first word of a sentence being named, gave the proper number. Schenckel being asked to repeat 25 doctrinal sentences, replied, that he thought 15 would be sufficient; and, accordingly, that number having been dictated, written down, and read, he united them to the former 25 sentences, and answered to the whole 40 in any order desired.

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* This account of Schenckel's experiments is taken from his *Memoria artificialis*, edited by *Buckhusy*. (See No. 32.)

On the 30th of Sept. another meeting was held at the house of a medicine-vender, when *fifty words* were given and *numbered* from 1 to 50. Schenckel having considered for a short time, repeated the whole from beginning to end, in regular order,—from the last to the first, and in any order required. On any *number* being given, he named the appropriate word,—and *vice-versa.* Having asked the persons present to double the number of words, some of the *literati* replied, that he had given sufficient proof of his abilities, and that they had no doubt he would be able to repeat many more words by the same method. A learned auditor expressed his regret to Schenckel, that he was not allowed to repeat *fifty sentences*, and a *hundred words*, being fully persuaded that he was capable of greater things.

Schenckel having presented to his auditory *two hundred* sentences, in which a pupil of his, taken from the last meeting, had been exercised, together with the 40 sentences then given, the pupil, on any number being asked, repeated the appropriate sentence, and *vice-versa*, to the astonishment of all present:—more especially at the unconnected manner in which the numbers were proposed; as 235, 27, 9, 240, 128, 19, 184, 3, 225, 2, 176, 36, 7, etc. etc. This same pupil offered to the assembly 250 written words, which he had learned by some tuition from Schenckel, and by his own application. To these 250 words were added 50 others; and, in a short time, the pupil answered to the whole 300, in the same manner as had been done before by the professor himself. In repeating the sentences, the pupil, once or twice, did not give the words regularly:—when this was intimated to him, he immediately corrected himself, and repeated the words in their appropriate order.

On the following day, the 1st of October, similar experiments were tried, greatly to the satisfaction of all present; and, in consequence, Schenckel received (without asking for it) a certificate of approbation, under hand and seal, from a learned physician, and some professors. This certificate concludes by observing, that ‘ the deponents’ were present at the different examinations,—that there was not a possibility of fraud or collusion—that they thought it but justice, thus unsolicited, to express their approbation,—and to bear witness to the truth of the facts stated in the document.

The student, destitute of oral instruction, cannot expect to reap much benefit from a perusal of Schenckel’s system in the *Gazophylacium*, or in *Schenckelius detectus:* he might as well seek for a knowledge of Mnemonics, by gazing at the hieroglyphics of an Egyptian obelisk. It is pretty evident that this *Gazophylacium* was designedly intended as a labyrinthal series: the author indeed closes his labors by confessing, that the work was to be entrusted only to his scholars, and referring for further elucidation to oral precepts. The very basis of his art is concealed beneath a jumble of signs and abbreviations: thus, sect. 9. d. a sect. 99; “ videlicet, locus, imago ordo locorum, memoria loci, imagines.” And further, in setting forth the most important points, he amuses himself by evincing a multitude of jingling, and unintelligible words.

In proof of this assertion, it will be sufficient to give the *key* from Backhusy's edition of Schenckel: it is a fair specimen of the obstacles which are presented to the student.

Clauicula seu explicatio libri.

FALVCO NIVALCA.

1. Legendum serom a focis barbæho.
2. Alpha & omega sunt lasos vitor.
3. Idque etiam in dict. osisis ouidi.
4. Si in dolubacoui q. itaro cruccos 1 reg. amucoli non habet, sed cygnus in illa tantum caballyso.
5. Hæbæretila singulæ sing. num. denotant. eædem gemi. pl.
6. Gen. ca. mod. temp. & alia datus obirttas, ex luanesi facile colliguntur:

a amulube macoue
b osias
c codrot
d emuluca sibuco.
e daitnem etnesi.
f amuit ecapso.
g bogamin
h aseirape:
i vanosrepo
k emusrodi
l asumodi
m imnis ftice orexes
n asulugnas.
o lairomemi
p damrofe
q osedesi
r asixarpæ
s asucoli
t bogamin
u rogamis
v usucolæ
x farreto.
y amuitios
z amulucato epecera

A efucis itemhtiras.
C emurtsaca
D emuoite ocnita istdo
E parti esenefa
G. & Gr. facitamo emargo
I asuirano bigamie
K emuxi fennoca
S emutnemi badnufa

N. asuremuni
P. Omuite galapo.
R. boitis otepera.
T. asurruase hti
V. amuirato enuloni.
Adi. emutae onuidas
ct. foitatica.
dct. roitato scidos
diu. poisis euido
cp. galoti osipes
L G. afucigoli
Mph. asucisyho epatem.
Or: roitaros
Ph. esucisyhpo
Pr. amenos enerpo
vel
laidos esorpo
L asutali
Rh. Laciros ethere

Ru. satnemis eduro
Sy. esixato anysi
Ve emubreui.
1. baereco
saledneca
vanlus
2. asungyco.
3. esuluge onairte.
4. asuluga inardo aquas.
5. esunami.
6. falletse.
7. lamtoni vel asiruceso.
8. exilacu ;
9. dunroca
0. asulunnas
exemora
esulucrico.

Reliqua studiosus Lector facile colliget.

CLAVICVLA.

1. Legendum Hæbraico more.
2. Prima & vltima litera sunt otiosæ.
3. Idque etiam in dictionibus diuersis.
4. Si in vocabulo Q occurat, prima regula locum non habet, sed primum in tantum illa syllaba: exemplum sit in asuluga inardo aquas: hoc est Quadrangulas, quæ vox numerum quaternarium significat.
5. Literæ singulæ singularem numerum denotant, eædem geminatæ, pluralem.
6. Genus, casus, modus, tempus & alia attributa ex sensu facile colliguntur.

Literæ significant.

a. Vocabulum
b. Ars
c. Ordo
d. Cubiculum
e. Sententia
f. Spacium
g. Imago
h. Partes
i. Persona
k. Dorsum
l. Domus
m. Exercitium
n. Angulus
o. Memoria
p. Forma
q. Sedes
r. Praxis
s. Locus
t. Imago
u. Imago.
v. Locus
x. Terra
y. Ostium
z. Receptaculum

A. Arithmeticus
C. Castrum
D. Distinctio
E. Fenestra
G. Gr. Grammatica
I. Imaginarius
K. Connexum

N. Numerus.
P. Palatium
R. Repetitio
S. Fundamentum
T. Thesaurus
V. Voluntarium
Adi. Adiunctum
Ci. Citatio
Dict. Dictatio
Diu. Diuisio
Ep. Epistola.
LG. Logicus
Mph. Metaphysicus
Or. Oratio
Ph. Physicus
Pr. Pronomen
Prosodia.
La. Latus
Rh. Rhetorica
Ru. Rudimenta
Sy. Syntaxis
Ve. Verbum.
1. Cadela, Cerca, Vlna
2. Cygnus
3. Triangulus
4. Quadrangulus
5. Manus
6. Stella
7. Norma vel Securis
8. Calix
9. Cornu.
10. Annulus, Remex, Circulus.

The work of Schenckel is a singular production. His development of the art does not confine itself to mechanical ideas alone. It sets the technical, symbolical, and logical faculties of the memory, in equal activity; and requires that its powers should be at once ingenious and perceptive. Its acquirement is founded on the association of ideas: nor does it fail to call wit and imagination in aid of natural memory. Sommer's Compendium, consisting of eight sections, was printed for the use of his auditors. After his departure, permission is given to his scholars to communicate their mnemonistic doubts, observations, and discoveries, to each other; but no one can be present without legalizing himself previously, as one of the initiated, by prescribed signs: and he who fails in this, is excluded as a profaner.

As Schenckel's work, besides being a literary curiosity, had, of late years, become extremely rare, *Dr. Klüber*, in 1804, published a German translation of it, entitled, '*Compendium der Mnemonik, etc.*' or, '*Compendium of Mnemonics, or the Art of Memory, at the beginning of the seventeenth century, by L. Schenckel, and M. Sommer. Translated from the Latin, with a preface and remarks, by D. Klüber,* 8°. *Erlangen,* 1804.

33. *De Memoria, ac Reminiscentia Discerptatio Sempronii Lancioni Romani ad mentem Philosophorum principum Platonis et Aristotelis concinnata. Verona*, 1608.

In this tract, are exhibited passages of divers authors, respecting the system of local memory as practised among the Greeks.

34. *Joh. Henr. Alstedii Theatrum Scholasticum*, 8°. *Herborn*. 1610.

In this work is contained the *Gymnasium Mnemonicum*, or, treatise on the Art of Memory.

35. *Joh. Henr. Alstedii Systema Mnemonicum*, 8°. *Franc*. 1610.

36. *Joh. Henr. Alstedii Trigæ Canonicæ*, 8°. *Franc*. 1611.

The first of these trigæ is *Artis Mnemonicæ explicatio*.

37. *Simonides redivivus; sive Ars Memoriæ et oblivionis (quam hodie complures penitus ignorari scripse-*

runt) tabulis expressæ, Authore Adamo Bruxio Sprotfasilesio Doct. et Med. cui accessit nomenclator mnemonicus ejusdem authoris, 4°. *Lips.* 1610.

A great part of the *Simonides Redivivus* was reprinted at Leyden, by *H. Herdson,* in the year 1651, under the title of *Ars Mnemonica, sive Herdsonus Bruxiatus; vel Bruxus Herdsoniatus.* To this was appended a treatise in English by Herdson, on the same subject, the whole of which may be seen at Nos. 52 and 53.

After the title of No. 37, there is a wood-cut nearly the size of the page, very tolerably executed. It represents a tree loaded with fruit,—a man mounted on a ladder, plucking the fruit,—a boy in a go-cart,—and a venerable figure (we suppose the *magister*) looking very attentively at the boy. Underneath the cut, are the following verses:

Scala viro, currus puero, quod scipio Acestæ ;
Hoc memorativa præstat in arte Locus.

Brux has treated the subject in a very comprehensive manner, and has subjoined a complete *nomenclator mnemonicus.* He also directed his attention to an art on which much less has been written:—the *ars oblivionis,* or art of *forgetful-*

ness, for the acquisition of which very full and minute directions are given Were this art 'eliminated out of the thick fog in which it is enveloped,' many a candidate would be found for the *sweet oblivious antidote.* In this (says the great moralist) we all resemble one another; the hero and the sage are, like vulgar mortals, overburdened by the weight of life; all shrink from recollection, and all wish for an *art of forgetfulness.*

Before we take leave of this interesting art, the following *jeu d'esprit* will be given from one of the daily papers,* as it deserves to be rescued from the usual oblivion of such repositories. It was written on the occasion of some lectures delivered on Mnemonics in the city of Dublin.

"SYLLABUS of the Public Experiments on the new system of *Anti-mnemonics*, to the perfectionation of which the Chevalier *de sans Souvenir* has devoted the last fifty years of a long life, fully verifying from the toils he has encountered and surmounted in the pursuit, the assertion of Pope,—

> "Of all the lessons taught to mortals yet,
> 'Tis sure *the hardest science*—to FORGET."

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* Morning Chronicle for Nov. 21, 1812.

EXPERIMENT I.

" *The Chevalier* will produce before the company *one of the Members* just returned to Parliament, and whom he shall have instructed not *one quarter of an hour*; he will present to him fifty of those *Constituents*, with whom but a week since he was on the most familiar terms, when to the astonishment of all present it will be found that he does not remember the face of one of them, nor retains the slightest remembrance of the *pledges* he gave or the *promises* he uttered, notwithstanding the utmost efforts of the abovementioned fifty *promises* to recal them to his recollection.

EXPERIMENT II.

" The Chevalier will present to the company an elderly Widow Lady, of demure aspect, and sedate appearance; she shall have a smelling-bottle in one hand and a white handkerchief in the other, which she shall respectively apply to her nose and eyes, and exhibit every other accustomed symptom of grief, when, by virtue of ten minutes' influence of the *anti-mnemonic* system she shall furl her flag of sorrow, pocket her bottle of disconsolation, dance a favourite Irish jig, box the ears of her *seven* children by her *first* husband, and loudly declare the impossibility of managing a large family without the aid of a second.

EXPERIMENT III.

"*A certain Viscount* has graciously promised to be present at the first exhibition, and to permit the efficacy of the art to be tried upon his *recollection*. Twelve Members of Parliament have likewise consented to attend, and severally to ask him twelve questions upon various topics of *foreign and domestic Policy—Unions—Swamps—Catamarans—Cat-o'nine-tails—Beds of roses—Triangles—Italian Music—The Penal Code—The Orders in Council—and, the Emancipation of the Catholics,*—by all which interrogatories, amounting to 144, he shall evidently appear quite unmoved; nay, during the whole time he shall smile, and preserve the most inviolable self-complacency.

EXPERIMENT IV.

"Many elderly persons having, since the Chevalier's arrival, complained to him of the intolerable tenacity of the memories of their children and dependants, who actually exhibit symptoms of impatience at the fiftieth or sixtieth repetition of the same story, and audaciously either *yawn* or anticipate the *denouement*, to the great mortification of the narrator. Now the *Chevalier* invites any one of the said respectable characters to his exhibition accompanied by seven or eight of his most *refractory family hearers*, and he engages, that after but ten minutes' instruction, they shall listen, not merely composedly, but with *something like* curiosity, to the most *thread-bare* tales, laugh in all the *proper* places, and exhibit every other symptom of being entertained and gratified.

EXPERIMENT V.

" A venerable Pluralist shall be brought forward for examination, and shall be asked, What promises he made at his ordination?—or whether he made any?—which of his *three* livings he last visited?—from what well-known author he transcribed his last sermon?—with how many persons amongst his several flocks he was acquainted? Not one of which interrogatories he shall be able to answer.

EXPERIMENT VI.

" *The Chevalier* will next present to the public a Lady of cold affections and morbid vanity, inoculated with the love of the great, possessed of a little smartness, which the superficial might mistake for wit, and deeply versed in what is termed knowledge of the world. She shall in early life have given the most unequivocal promise of her affections to an unpractised heart, that trusted her with all the unlimited credulity of confiding love—pledges shall have been mutualized, and those solemn assurances reciprocated which indissolubly bind the faithful, and can only be violated by the unprincipled,—yet by the influence of this miraculous science, she shall forget her vows, deny her attachment, and finally marry another person; and when the parties afterwards meet, no feeling shall arise in her mind but a kind of aukward flutter, nor in his but the most contemptuous indifference.

EXPERMENT VII.

"An eminent Lawyer shall also be produced in testimony of this wonderful art, who will be found to be proof even against *a Refresher*, and this is supposed, with *one illustrious exception*, to be the *ne plus ultra* of *anti-mnemonic* influence. If circumstances did not imperiously prevent, the Chevalier could produce this *Exalted Individual*, and triumphantly display him as one of the singular prodigies of the *anti-mnemonic* system. It is asserted by a celebrated *cranioscopist*, Dr. Gall, that *early friendships* make the deepest impression upon the human brain, and are with the greatest difficulty effaced—that they linger there, the last and most tenacious inmates, when other recollections have been weakened by years, or absorbed in selfishness. To triumph over a radicated feeling like this was reserved for that science which can pervade the cottage as well as the palace, and while it steeps *the peasant's* mind in balmy forgetfulness, can equally relieve *the Prince* from the pangs of reminiscence.

" *The Chevalier sans Souvenir* having thus far developed his plan, will not for the present enter into further details. To *the Irish Nation,* whose characteristic it is to FORGIVE, he begs leave particularly to recommend his system, which will also enable them to FORGET their manifold wrongs and injuries, and only to *remember,* that *an united,* are ever *a happy,* and *a prosperous,* people; that to *Religious and Political opinions perfect freedom* should be given, if we wish to be happy at home or formidable abroad; that all irritating retrospects should merge *in the love of country,* and that our endeavours should zealously and exclusively be directed to *the Reform* of internal abuses, and *the extension* of public liberty, that so the glorious fabric of our Constitution may be enabled to resist the aggression to which it is exposed, and to survive the storm which has made shipwreck of other Governments."

38. ***Fr. Mart. Ravellini Ars Memoriæ***
8°. *Franc.* 1617.

The principles of the art according to *Ravellin* are four;—place, image, order, and practice or use of the images. He takes houses, chambers or rooms, and walls, in the following order; on entering the room, and standing with the back to the door, the first wall is to be on the left, the second before us, the third on the right, the fourth behind us, and the *floor* is to be reckoned as the *fifth* wall. The letter M is to be supposed on each wall, and to be divided thus:

3 4
1
2 5

In each of these divisions a hand is to be placed, consequently 25 places will be gained, if we count one for each of the fingers and the thumb. By taking ten hands and disposing them in the same manner, fifty places are obtained, and if each *wrist* be accounted as one place, 60 compartments will be found. In these compartments the image of what is intended to be remembered is to be placed. Ravellin afterwards divides a wall by tens, precisely in the same way as Mr. Watson has done in the *Sloane MS.* before noticed. The tract of *Ravellin* was reprinted in 1678, with five others, in an octavo volume, entitled, *Variorum de Arte Memoria Tractatus Sex.*

39. *Utriusquè Cosmi, majoris scilicet, et minoris Metaphysica, Physica et Technica Historia, auctore Roberto Fludd, 2 tom. fol. Openh. et Franc.* 1617—1621.

A few pages of this curious and expensive work are devoted to an explanation of the author's system of Mnemonics. This seems to be an attempt to combine the ' Ars Magna' of Lully, with the local memory of the antients, as improved by the modern memorists. Some curious wood-cuts accompany the description; and there are, on other subjects, many extremely singular prints in this *rare* work, which are intelligible only to an adept. The portrait alone of Fludd, prefixed to the first volume, has been valued at *four guineas!!!*

ROBERT FLUDD, or as he styled himself in Latin, *de fluctibus*, was the second son of Sir Thomas Fludd, Treasurer of War to Queen Elizabeth. He was born at Milgate in Kent, in the year 1574, and was educated at St. John's College, Oxford. He was a very voluminous author in his sect, diving into the farthest profundities, and most mysterious obscurities of the Rosycrucian philosophy;—and blending in a most extraordinary manner, divinity, chemistry, natural philosophy, and metaphysics. He was made Doctor of Physic in 1605, and died 1637.

40. *Apsinis Græci Rhetoris, de Memoria liber singularis latine nunc primum vertit, Fed. Morell. Paris,* 1618.

41. *Inæstimabilis Artis Memorandi Thesaurus, ex variis optimisque authoribus depromptus, ab Adamo Naulio, Rheto. Sacerd. et S. Theol. Doct.* 8°. *Paris.* 1618.

Naulius has compiled a useful and well-arranged digest of the different authors who have written on this subject, and has devoted a chapter, treating of the application of the art, to each of the following persons:—divines, confessors, lawyers, linguists, rhetoricians, astrologers, geometricians, kings, princes, and noble travellers.

42. *Mnemonica; sive Ars Reminiscendi: e puris artis naturæque fontibus hausta, et in tres libros digesta, ac non de Memoria naturali fovenda libellus e variis doctissimorum operibus, sedulo collectus: jam primum in lucem edita authore Johan. Wil-*

lisso, Sacræ Theolo. Bacch. 8°. *Lond.* 1618.

The treatise *de Memoria naturali fovenda,* was reprinted at Frankfort, in the year 1678, with five other tracts, in an octavo volume, entitled *Variorum de Arte Memoria Tractatus Sex.* The whole work was translated *by Leonard Sowersby,* a bookseller 'at the Turn-stile, near New-market in Lincoln's Inn Fields, and printed in the year 1661, with the following title:

43. *Mnemionca; or, the Art of Memory, drained out of the pure fountains of art and nature, digested into three books. Also a physical treatise of cherishing natural Memory; diligently collected out of dvers learned men's writings. By John Willis, Batchelour in Divinity,* 8°. *Lond.* 1661.

As this book has become rare, and developes many of the principles of the local memory in an apt and intelligible manner, our extracts will be more copious than usual.

The worthy translator seems to have been a man of very unassuming manners. The *dedica-*

tion, which we recommend all booksellers of the present day to peruse and imitate, has not its parallel for diffidence and humility.

"TO THE HONORABLE

"WILLIAM PIERREPOINT, ESQ.

"*Honored Sir*,

"If Lines were capable of Humane affections, these would blush, they are so mean a present to so Illustrious a person; at least conscious of their Masters presumptions, they would condole his unhappiness, that had not greater ability to accommodate some more worthy Fabrick to so fair a Frontispiece. The Original compiled by a learned hand, among some vulgar things and trifles, containeth very excellent aud profitable matter; I hope it hath not lost its utility (though Grace) in English.

"*Honored Sir*, I fear, good intentions are no sufficient Plea for temerous Enterprises, especially the Undertaker being privie to his own imperfections; Therefore like a Criminal acknowledging my vanity in ambitiously affecting things above my Sphere, I humbly re-implore your Honors pardon and admittance to be what I was before,

Your Honors most
humble Servant
LEONARD SOWERSBY."

The author, in the preface, having compared his Art of Memory to *a new-born infant*, because it was then first presented to the world, proceeds to show the advantages attendant upon it. The *first book* treats of remembering common affairs, words, phrases, sentences, and speeches, by means of notes and writing.

Having despatched these vulgar ways of memory, our author proceeds to speak in the *first chapter* of the second book, 'of remembring without writing,' and says, "I descend to helps conducing to the same purpose without *Hand-writing*, which is then most pleasant, when we are destitute of the aid of Paper, Ink, or Table-Books, or when by some obstacle we are debarred the free use of them. This consisteth of two operations, *Reposition* and *Deposition*.

"*Reposition* is the manner of charging *Memory* with Note-worthy things; herein it is not to be expected that each particular word of every sentence be retained; but onely, that the general sence be fastened in mind. At all times when a man is about to commit any thing in custody to his *Memory*, first let him study to drown all unnecessary thoughts in oblivion, that he may perfectly intend the things he is to learn. * * * * A ready remembrance most commonly proceedeth from right understanding the thing in hand; therefore a man must prepare himself diligently, and so unite the force of his imagination, that he may as it were engrave and imprint occurrent things in his memory. *Lead* doth facily receive impression, because it is tenacious, which *Quick-silver* cannot admit, by reason of its *Fluxibility:* In like manner fleeting inconstant minds continually hurried into new & strange cogitations, is far from gathering fruit by any thing heard. The method of a speech is chiefly to be observed, regarding seriously what is the general subject thereof; Secondly, the greater parts, and with what Logical Arguments each part is handled; the perfect Method of a speech doth much conduce to remember the whole; or if the Contexture thereof be inartificial, imperfect, and unsatisfactory, comprehending many things forcibly applied, rejecting things of a like kind, yet a strong Memory will retain the same by observation of the absurdities and rude *Artifice* of the whole.

" *Deposition* is when we recollect things committed to memory; and having transcribed or transacted them, discharge our memories of them, which is alwayes to be practised at the first opportunity: Things charged in Memory by day, are to be deposited at least before sleep, if not sooner; things charged by night, are to be deposited immediately after sleep, that the mind be no longer burthened than is convenient, and that things negligently laid up in mind, be not forgotten, *Writing* being the faithfullest Guardian of *Memorandums.* If in dis-burthening your Memory, something charged happen to be forgotten, shut your eyes, that no external obiect may divert your mind, and try to recall it by importunate scrutiny; which operation may be called *Revocation,* and is an Art that by help of certain Rules teacheth the investigation of things lapsed out of memory.

" To conclude, *Deposition,* or discharging things committed to mind, is not unlike expunging writing out of Table-Books: If therefore there be any Art of *Oblivion* (as some affirm) it may be properly referred hither. So much in general; now to explicate the particular species thereof."

The *second chapter* treats of ' remembring by certain verses purposely born in mind,' the *third* ' of remembering by extempore verses,' and the *fourth* ' of exonerating things charged on memory ex tempore.' The manner of remembering by verses already composed, says Mr. Willis, is when a man doth excogitate or retain remarkable things by repetition of verses provided to that purpose. Suppose an *attorney,* be to wait upon Judges riding the Circuits from one County to another, it may be worth his labour to repeat these verses at leaving his lodging, lest he forget some necessary thing, which we may imagine formerly framed by him to this end.

Scalpellum, calami, cornugraphiumq; libelli,
Charta, pugillares, capitalia, cera, sigillum,
Sic crepide, gladius, cultellus, pugio, bursa,
Muccinium, indusiumq: monilia, penula, pecten
Fascia cruralis, cruralia, dactylothece.

These useful hexameters are thus *done into English*, by the worthy Mr. Sowersby.

Pen-knife, Quills, Ink-horn, Book, Paper, Table-Books, Caps; Take
Wax, Seal and Slippers, Sword, Knife and Dagger, safe make;
Purse, handkerchiefs, Shirts, Rings, Coat, and for your own sake,
Combs, Garters, Stockins, Gloves.

The following *memorial verses* for a traveller, from FITZHERBERT'S HUSBANDRY, will form a suitable companion to those of Mr. Willis. They are *hexameters*, but were by the Printer jumbled into prose, and have been restored by a correspondent in the GENTLEMAN'S MAGAZINE for October 1767, vol. xxxvii. p. 487.

Purse, dirk,* cloak, night-cap, kerchief, shoeing-horn, buget,† and shoes;

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* Dirk is a word of the same age. *Dagger* will not scan quite so well.

† *Buget*, budget.

Spear, mails, hood, halter, sadle-cloth, spurs, hat, wi thy horse comb :
Bow, arrow, sword, buckler, horn, brush, gloves, string, and thy bracer ;
Pen, paper, ink, parchment, red, wax, poms,* books, then remember :
Pen-knife, comb, thimble, needle, thread, point, lest that thy girth break ;
Bodkin, knife, lingel,† give thy horse meat : see he be stowed well.
Make merry, sing an thou canst, take heed to thy geer, that thou lose none.

Having recommended the *carpenter* to apply himself to the Muses and register his tools in the day-book of Parnassus, Mr. Willis introduces the following verses composed by himself.

An? quisquid? cujus? cui? quo? quibus? auxilijs? cur?
Quomodo? circa quid? qualis? quantum? ex, in et a quo?
Quamdiu? ubi? quando? quoties? quotuplex? quot et unde?

These *quiddities* are thus translated by Mr. Sowersby for the benefit of the English reader, and more particularly for the ladies, whose natural curiosity might well be excited by so formidable a list of quæres.

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* *Poms,* perfumed wash-balls, *pomanders.*

† *Lingel,* an awl.

If? who? what? whose? to what? whether? why? about what?
How? what fashion? how much? by, of, in, and from what?
How long? how often? how manifold? whence came that?
Where, when, how many?

"These Verses (craving the Readers pardon for the ruggedness) contain twenty two Questions of excellent use to invent, retain, as also to recall to minde things of great concernment and worthy memory in urgent affairs.

* * * *

The most curious and interesting part of these "drainings out of the pure fountains of art and nature," is to be found in the third book; a large proportion of which we have reprinted.

CHAP. I.

" *Repositories.*

"THE Art of *Memory*, which we now treat of consisteth of *Ideas*, and places, wherein we will first handle the *Reposition of Idea's*, and afterward their *Deposition*.

" *Reposition* of *Idea's* is, when things to be remembred, are charged upon *Memory* by *Idea's*, disposed in certain places of a *Repository*; but before I discend to the manner of *Reposition*, it is necessary for better explanation, to speak of *Repositories*, *Places*, and *Idea's* in distinct chapters.

" *A Repository* is an imaginary fabrick, fancied Artificially, built of hewen stone, in form of a *Theater*, the form whereof followeth ; suppose the Edifice to be twelve yards in length within the walls, in breadth six yards, and in height seven yards, the roof thereof flat, leaded above, and pargetted underneath, lying wholly open to view, without any wall on that side supposed next us: Let there be imagined a *Stage* of smooth gray Marble, even and variegated with a party coloured border, which *Stage* is to be extended over the whole length and breadth of the building, and raised a yard high above the *Level* of the ground on which the said Edifice is erected: Let all the walls, that is, the opposite wall, & two ends be wainscotted with *Cypresse* boards, so artificially plained and glewed, that the joynts be indiscernable; suppose also a *Groove* or *Gutter* cut in the middle of the *Marble Stage*, three inches broad, extended from the opposite wall to the hither side of the *Stage*, whereby it is exactly divided into two equal parts, and that upon the further end of the said *Groove*, there is erreared a *Column*, a foot and half thick, arising up to the *Roof* of the building, almost touching the opposite wall, and deviding it into two equal parts, as the *Groove* divideth the *Stage*; so that by the *Groove*, and the *Pillar*, the whole *Repository* is parted in twain, and consisteth of two *Rooms*, siding each other, each of them being six yards long, six yards broad, and six yards high. For the better understanding this invention, I have caused a *Type* of the *Repository* to be here delineated, the explanation whereof immediately followeth."*

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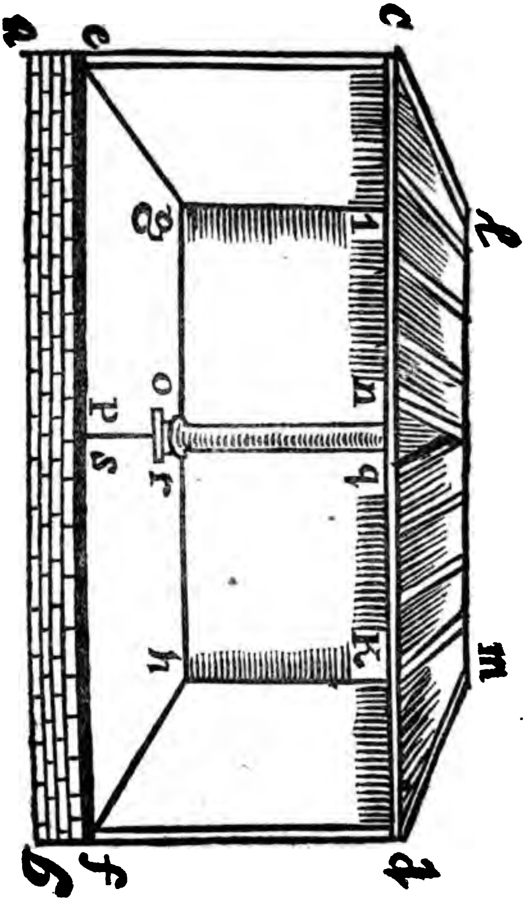
* That nothing might be wanting to elucidate this curious description, we have given a fac-simile of the original wood-cut. See next page.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"The letters, *a, b, c, d,* shew the length of the edifice, *a, c, b, d,* the height, *a, e, b, f,* the height of the *stage, g, i, k, h,* are boundaries of the opposite wall, *e, c, i, g,* the side wall upon the left hand, *h, k, d, f,* the side wall of the right hand, *c, l, m, d,* design the *Roof, g, i, n, p,* the opposite wall of the first *Room, e, g, o, p,* the *stage* of the first *Room, r, q, k, h,* the opposite wall of the second *room, s, r, h, f,* the *stage* of the second *room, n, o,* the *pillar* dividing the opposite wall, *o, p,* the *groove* wrought into the *stage.*

"A *Repository* according to this fashion, is to be represented before the eyes of our minde, wheresoever we are, as oft as we intend to practise this Art; supposing ourselves to stand about two yards distant, against the midst thereof.

CHAP. II.

"*Of Places.*

"A *Place* (as to our consideration) is an apt space in a *Repository,* designed for reception of *ideas.*

"There are onely two *places* in every *repository* of equal form and magnitude, that is the two rooms of each *repository* determinated as aforesaid by the *pillar* and *groove*.

"That place is said to be the former, which is on the right hand of the *repository*, that which is on the left hand, the latter; that part of the *repository* is said to be on the right hand, which is opposite to the left hand of a man standing against the middle of the *repository*, that on the left hand which is opposite to the right.

"Thus in the *scheme* exhibited in the former chapter, the letters *g, i, n, o,* demonstrate the opposite wall of the right hand part, or first place or *room* of the *repository*, and the letters, *e, g, o, p,* the *stage* thereof; so *r, q, k, h,* are indices of the opposite wall of the left hand part, or second *place* or *room* of the *repository*, and *s, r, h, f,* the *stage* of the same.

CHAP. III.

" *Of Idea's in general.*

" An *idea* is a visible representation of things to be *remembred*, framed by a strong imagination, by help whereof the minde by reflexion calleth to *memory*, together with the *idea*, the thing represented. *Idea's* are to be vested with their proper circumstances, according as their natures require, for like as *writings*, the fairer they are, are more facilly read; so *idea's*, the more aptly they are conceived, according to the exigency of their nature, are more speedily recalled to minde; and also consequently the things by them signified. *Motion* is to be attributed to *idea's* of moveable things; *quiet* to *ideas* of quiet things, and good or evil savours, to *ideas* representing things so qualified. Examples of moveable *idea's*, are artificers at work in their shops, women dauncing, trees shaken by the wind, water running from cocks, and such like. *Idea's* of quiet things, are henns laying in their nests, thieves lurking under bushes, &c. *Idea's* to which sound is ascribed, are a lion roaring, a bell ringing, whistling, murmure of trees, a quirister singing, a huntsman hollowing, &c. Moreover, if perfume, burning in a chafing-dish, be used for an *idea*, a sweet and pleasant odour must be attributed thereto, on the contrary to vaults under ground, a filthy, unwholesome stink, is to be assigned; so *idea's* of merry men, require cheerfulness of countenance, of sickmen, paleness and sadnesse. After this manner *idea's* of edifices, machines, and all artificial things whatsoever, ought to be signalised; proportion of form, and splendour of colours, must be attributed to *pictures*, grace and livelinesse of letters, to *writings*, glory and excellency of *workmanship*, to *engravings*; finally, every *idea* must have such illustration as may render it most notable and conspicuous, and seem principally coherent to its nature.

" But before I proceed further, it is expedient to take into consideration, the common *affection* of ideas, their *species* shall succeed after, in a more proper place.

The common *affections* of *idea's* are three: *quantity*, *position*, and *colour*.

CHAP. IV.

" *Of the Quantitie of* Idea's.

" An *idea* in respect of *quantity*, is either *equal*, *greater*, or *lesser* then the thing represented.

" An equal *idea* is, when the thing represented, is bestowed in a *place* of the *repository*, in its proper and due magnitude, as being neither too great to be contained therein, nor so small it cannot be discerned by one standing before the *repository*; such are *chairs*, *pictures*, *tables*, *beds*, *heaps of stone*, *piles of wood*, *two combatants in a single duel*, and the like.

" An augmented, or greater *idea*, is when the thing to be remembered, is increased to a multitude, that it may be better viewed at a distance, which else being small, would not fall under cognizance; as if the thing to be deposited in the *repository*, were a *penny*, a *pearl*, a grain of *mustard-seed*, or a *spider*, which are so small, that disposed in a room of the *repository*, they escape the sight of a man standing before the *repository*: in such cases, instead of one penny, imagine a heap of pence new coined; instead of one pearl, a multitude of pearls; instead of one grain of mustard-seed, fancy certain bushels scattered about the stage; and for one spider, suppose a multitude creeping about the opposite wall.

" A contracted or lesser *idea* is, when the thing to be remembered is so great, that it cannot be comprehended in its proper natural quantity, within such narrow limits of a room of a *repository*, and is therefore imagined to be pourtrayed with elegant lively colours, in a picture fixed to the opposite wall. Thus space of places how far soever distant, and all great things, may be facilely represented in a picture: as if the thing to be remembered were a battel, a triumphant spectacle, hunting or hawking through woods and groves, a naval conflict, large territories, castles, a mountain, or church, &c. whose *idea's* cannot be contained in the memorial places, unless contracted, and aptly and artificially comprized in a picture, conceited by imagination hanging against the opposite wall, that so it may be fully comprehended.

CHAP. V.

" *Of the Position of* Idea's.

" LET the position of every *idea* be such as in vulgar use doth most commonly appertain to the thing signified; let the *idea's* of things usually hanged against a wall, be so disposed in the *repository*, as musical instruments, arms, looking-glasses, pictures, brushes, written tables, &c. Such things as are customarily fastened to, or in a wall, imagine them accommodated in the repository in like manner, as title-pages of books pasted against the pillar, proclamations, or printed pages nailed to the wall, funeral-streamers, or pendants, in the higher part of the opposite wall, as you see in churches: such things as are commonly set upon shelves, fancy them so placed in the repository; as vessels of gold, silver, glasses, books, mercery wares, &c. Such things as are usually placed on a table, conceive them so marshalled in the repository, as victuals, sums of money, table-boards, &c. such things as lye, or are any ways situate on ground, must be so placed in the *repository*, as heaps of wheat, a cradle, chest, table, living creatures, whether standing, sitting, or lying, &c. Such things as are frequently under ground, are to be supposed under the marble-stage; for though they escape the eye of a man standing before the repository, yet they cannot be concealed from the eyes of his mind, which are only exercised in this matter; of this sort are graves, wells, wine-cellars, mettaline-mines, subterranean passages, through which streams have their course, as blood in the veins, &c. Like method is to be observed in site and position of all other things.

CHAP. VI.

" *Of the Colours of* Repositories *and* Idea's.

" Here you are to be admonished, that although every *repository* is supposed to be uniform in building; yet they are distinguished from one another by the pillar in the middle of every *repository*, which must be imagined of several colours; as if you use ten, that which you design for the first, must be conceived to have a golden pillar; the second a pillar of silver; the third of black stone; the fourth of blew stone; the fifth of red stone; the sixth of yellow stone; the seventh of green stone; the eighth of purple stone, the ninth of white stone, the tenth of cinamon colour. Now for distinction sake, gold is called the colour of the first *repository;* silver the colour of the second *repository;* black of the third *repository;* and so successively as before. If you use more than ten repositories, you must repeat the same colours over again, as before; so that the eleventh is imagined to have a golden pillar, the twelfth a silver pillar, the thirteenth a black pillar, the fourteenth a blew pillar, and so the rest in order. After the same manner every *idea* must be conceived cloathed, adorned, or some way illustrated with the proper colour of the *repository,* wherein it is imagined to be placed. Take an example or two for better explanation: suppose a saylor in a canvase suit be retained for an *idea* in the first *repository,* I represent him standing there with a golden chain over his shoulder like a belt; if in the second, imagine he weareth a silver chain about his neck, with a whistle fastened thereto: if in the third, that he hath black boots on his legs: if in the fourth, that he hath a blew skarf on his arm, tyed in a rose-not: if in the fifth, that he wears a Red Monmouth Cap on his head: if in the sixth, that he swaggereth with a yellow feather in his cap: if in the seventh, that he hath a green silk garter on his right leg: if in the eighth, that his canvase coat is imbellished with a border of purple velvet: if in the ninth, that his neck is beautified with a very white orient pearl; if in the tenth, that he hath a pair of cinnamon coloured breeches.

"Howbeit, if the *idea* of its own nature be any ways related to the colour of its *repository*, whereby it may be presently understood to have the colour thereof, it will need no other attribution: for example, if a mayor of a city, (who in regard of his office is dignified with a purple gown, and gold chain) be placed as an idea in the first or fift *repository*, there will be no need of attribution of colour, because the golden chain doth manifestly represent the colour of the first *repository*, the purple gown of the colour of the fift. In like sort, if a black bull be placed as an idea in either room of the first *repository*, his horns must be conceived gilded with gold; if in the second, with silver; if in the third, black, being the proper colour of that *repository*, excludeth any other addition: if in the fourth, let him be decked with a chaplet of the blew flowers; if in the fift, with a garland of red roses, &c. So a picture imagined to be painted on the opposite wall of the first *repository*, must be illustrated with gold in some convenient place; if in the opposite wall of the second *repository*, with silver; of the third, with black, &c.

"This attribution of a *repositories* colour, is of marvellous use, both to keep in mind the *idea's* themselves, as also their order; hereby the mind re-perusing *ideas* formerly bestowed, hath alwayes some certainty to guide itself, and recollect any *idea* at present latent; because it's unquestionable, that the missing *idea* is either wholly, or at least in part, illustrated with the proper colour of its *repository*.

"Moreover, in attributing a *repositories* colour to an *idea*, (of it self not partaking thereof) you must be careful that the colour of the *repository* be accommodated to the most eminent part of the *idea*, or as near as may be: if the history of the prophet *Jonah* thrown into the sea by mariners, be used as an *idea*, it must be represented in a picture according to the third chapter preceding; in which, though the whale, sea, ship, and land are to be pourtrayed, yet the effigies of *Jonah* himself is the most remarkable part of the picture, because *Jonah* is of the history there painted: if therefore this story be to be deposited in the first *repository*, let the border of his gown be supposed of gold; if in the second, of silver; if in the third, let the gown be fancied black; if in the fourth, blew, &c. so the top of a heap of wheat is the most conspicuous part; therefore if a heap of wheat be placed in the first *repository*, imagine a golden streamer two foot long, fixed in the top of the heap; if in the second *repository*, let the streamer be silver; if in the third, black; if in the fourth, blew, &c.

" Thus much may suffice for common affections of *idea's*, in quantity, position, and colour; their species follow.

CHAP. VII.

" *Of Direct* Idea's.

" An *idea* is simple or compound: a simple *idea* is uniform, and is fourfold, *direct*, *relative*, *fictitious*, and *written*.

" A *direct idea* is when a visible thing, or conceived under a visible form, is bestowed in the *repository*, according to the same form, under which it is naturally apprehended: so a *goat* is the direct idea of a *goat*; a *rhinocerot* of a *rhinocerot*; a *peacock*, of a *peacock*; a *dove* of a *dove*. Thus a majestical man adorned with a scepter, imperial diadem and robe, is the *idea* of a king: a person arrayed in academical habit, of a schollar; an ancient woman in mourning weeds, weeping and wiping her face with an handkerchief, of a widow: a virgin apparelled like a nun, of a nun: a satyr, as the poets describe them, of a satyr: so a temple is the direct idea of a temple, a book of a booke, a bed of a bed, a sheath of a sheath, an image of an image, a picture of a picture, an epistle of an epistle, a bond sealed, of a bond: so good angels and spirits, though they be incorporeal and invisible, (seeing they are commonly conceived under visible forms) may be reposited as the other. To conclude, the minde of man doth naturally and immediately present direct *idea's* of all visible things, or such as are conceived under a visible form, that it is in vain to excogitate any, but rather use those that offer themselves. If a man hears the relation of a naval battel, doth not he presently seem to behold the sea, ships, smoke of great ordnance, and other things obvious in such matters. If speech be made of mustering an army, doth not the hearer form in his minde the effigies of the field, replenished with soulders marching in military postures. No precept in this kind is delivered, which nature it self hath not dictated; but onely to imprint these *idea's* more deeply in memory, we bestow them methodically in some place, lest otherwise they be forgotten through light apprehension. To explain this more evidently, I will use an example.

" *An Example of remembring a History.*

" *Diogenes* the *Cynick* entering *Plato*'s hall, when he saw the table covered with a rich carpet, the shelves glittering with silver, gilt cups, vessels, and other sumptuous furniture, laid hold of the carpet with all his might, threw it to the ground, and trod thereon with his feet, saying, *I tread upon* Plato's *pride*: to whom *Plato* replied, *But with greater pride.*

"The *idea* of this story is not so great, but that it may admit reposition in its equal quantity: therefore I suppose in the place of the *repository* where it is to be bestowed, that there is a table covered with a rich carpet, which a sordid fellow in beggarly raiment, throws on the ground, a grave man clothed in honest sober apparel looking on. The attribution of the colour of the *repository* is not to be forgotten: if therefore it be the first *repository* in which this *idea* is to be placed, I imagine the carpet to be imbellished with a fringe or border of gold: if in the second, of silver: if in the third, of black: if in the fourth, of blew, and so forth in the rest.

"*An example of a Sentence to be remembred, the subject being visible.*

"An *ant* is a small insect, the coldest and dryest of all creatures, and therefore the wisest; for cold and dry do chiefly contribute to wisdom. The idea of this sentence ought to be augmented; for the magnitude of an *ant* is so inconsiderable, that being bestowed in a memorial place, it escapeth sight: therefore I suppose an *ant*-heap in the middle stage of the memorial-place, seeming almost black with *ants*, swarming hither and thither; as for assignation of colour if this *idea* be placed in the third *Repository*, the colour of the *Repository*, is sufficiently noted by the blackness of the *ants ;* if in the seventh, by the greenness of the *ant*-hill; so that there needeth no addition of colour, if placed in the third or seventh Repository: But if it be designed to the first Repository, let a triangular golden streamer be supposed fixed in the *ant*-hill, a foot high; if in the second, a silver streamer; if in the fourth, a streamer of blew silk; if in the fifth, of red; if in the sixt, of yellow; if in the eighth, of purple; if in the ninth, of white; if in the tenth, of cinnamon colour.

" All Histories, Actions, Fables, common Affairs; all visible things, or conceived under a visible form; finally, All sentences whose subject is visible, may be disposed in Repositories by Direct Ideas, in equal, augmented or contracted quantity."

Chap. viii. and ix. treat of relative and fictitious ideas. Chap. x. of written Ideas, and chap. xi. of compound Ideas.

In chap. xii. Mr. Willis gives the following rules for the ' choice of ideas.'

" *Rule* 1. All Histories, Actions, Fables, Apologies, common businesses, visible things, or conceived under a visible form, all sentences whose subject or matter is visible, and without any dependent written illustration, ought to be laid up in the Repositories by a Direct Idea, in quantity equal, augmented or contracted. *Cap.* 1.

" *Rule* 2. All Histories, Actions, Fables, Apologies, Morals and Similyes, remarkable for some coherent Verses or Writings, as all Epigrams, Epitaphs, Anagrams and Impresses are generally to be expressed by a compound Idea, consisting of a Direct and Scriptile. *Cap.* 2.

" *Rule* 3. All Emblems and Sentences illustrated by some notable Example, or expressed Hyeroglyphically, are to be bestowed in Repositories by a compound Idea, consisting of a Relative and Scriptile. *Cap.* 2.

" *Rule* 4. All Characters, single Letters, naked Numbers, Calculations of Nativities, Cosmographical descriptions and citations, are to be always disposed in Repositories by a Scriptile Idea.

" *Rule* 5. All single words signifying no visible thing, whose Idea either relative, fictitious, or compound of fictitious and scriptile, doth presently occur, is to be so placed in the Repository, either relatively, fictitiously, or compoundly: If no such Idea occur, then it is to be represented by a Scriptile Idea.

" *Rule* 6. All Phrases and Sentences inexpressible by a Direct Idea, may be conserved by a Relative Idea, or compounded of a Relative and Scriptile, if any present itself commodiously, or if no such offer itself quickly, by a Scriptile Idea."

In chap. xiii. the following rules are given for '*reposing Ideas.*'

" *Rule* 1. Every Idea is to be placed in its order, *viz.* that which first occurreth in the first place; the second in the second place of the first Repository; the third in the first, the fourth in the second place of the second Repository; fift in the first, the sixt in the second place of the third Repository; the like method is to be used in all the Repositories, till all the Idea's be placed.

" *Rule* 2. Due quantity, convenient site, colour of the Repository, and peculiar attributes, are to be imposed on each Idea, and very carefully minded.

" *Rule* 3. After you have rightly disposed the first Idea of any Repository, note it very diligently with the eye of your mind, as if it really stood there, observing its kind, subject, quantity, site, attribution of the Repositories colour, and other such like peculiar attributes, if it have any. For example, whether the Idea deposited in the first place of any Repository (as to the kind) be direct; as to the subject, concerning a man; in respect of quantity, equal; in regard of sight, placed on the ground; and as to peculiar attributes, whether moving or yielding a sound; go over all these things in your mind, saying, The Idea which I have here bestowed, is Direct, of a man, equal, placed on the ground, moving and yeilding a sound: For by such considerations an Idea is more firmly graven in memory.

"*Rule* 4. After you have fitly disposed the second Idea of any Repository, you must excogitate some apt relation thereof to the former, in respect of likeness or unlikeness of site, likeness or unlikeness of subject; or else in regard of the action of the latter Idea referred to the former; you can pitch upon no Idea which may not be related to the former by one of these five wayes, which shall plainly appear by example: if both *Idea's* of one Repository, precedent and subsequent, be fixed to the wall, placed on a table, the ground, or under ground, *&c.* they agree in site: But if one be fastened to the Wall, the other placed on a Table, on the ground or under ground, they are unlike in site: When the subject of both *Idea's* is Justice, Sin, a Man, War, or Sleep, *&c.* they agree in subject; but when the subject of one *Idea* is Justice, of the other Drunkenness, the one of a man, the other of a stone, or any other opposite thing, they disagree in subject. Take an example of transferring the action of a latter Idea to a former: Suppose that a man in a Gown, sitting at a Table, and overlooking some Books of Accounts, with Counters lying ready to compute the total sum, be an Idea disposed in the first place of a Repository; and the Idea to be placed in the second room of the Repository, be a Farryer giving a Horse a Drench with a Horn: In this case, that the action of the latter may have some dependance on the former, imagine that the Horse (as soon as the drench is poured into his mouth) leaps back and disturbeth the man in his reckoning, who sits at the Table in the first place of the Repository. This mutual Relation of Idea's placed in the same Repository, is as it were a linking of them together, and doth admirably conduce to the remembrance of both.

" *Rule* 5. If two or more distinct idea's concur, whose relation to one another is found so near, as if they were combined together; bestow them in one same Memorial Place: As if the Idea immediately preceding be a Silver Bason full of fragrant Water, set upon a joyned Stool, and the subsequent Idea be an idle man doing nothing; you may conjoin these two Idea's in one, imagining that this man washeth his hands in that odiferous water; so if the former Idea be two Virgins talking together, the latter a Skein of Green Silk, to join these two Ideas by a proper connexion, you may fancy that one of the Virgins holdeth the Skein upon her wrists, whilest the other windeth it off her hands into a bottom. In like manner if the Antecedent Idea be Scriptile, and the Consequent likewise Scriptile, if so be you allow space enough in the Table, the latter may be subscribed under the former in a convenient distance from one another. Thus three Scriptile Ideas concurring together, if they be not too large for one Table, may be supposed written therein; the first in the highest place, the second in the middle, the third in the lowest, allowing nevertheless a fit distance. But alwayes when you comprize two or three Ideas in one place, you must remember carefully, that so many Ideas were constituted in such a place.

" *Rule* 6. When you have laid up any *Idea* in its *Place* (whether it be in the first or second *Room* of the *Repository*) peruse all the foregoing *Idea's* in their order, if you have time, that they may reside more deeply in *Memory*, and make the stronger impression in minde. *For as a School-boy by often reading over his lesson, learneth it by heart*, so the more frequently you peruse *Idea's*, the more firmly you will retain them.

"*Rule* 7. Lastly, have a care not to load your *Memory* with a more numerous multitude of *Idea's* than is fit, for as it is unwholesome to burthen the stomach above its strength, so also to overwhelm the *Memory* with multiplicity of *Idea's*, doth lead into great confusion. Temperate men admit only so much meat as they think they can well concoct; so do you only commit such things to *Memory*, as you trust faithfully to remember; for it is better firmly to retain a few remarkable things, than many of mean base nature.

In chap. xiv. which treats "*of the practice of the Art of Memory*," we have the following

"*Examples of ordinary business.*

"I. Suppose (as taking it for granted) you were to go to some great Market Town, it concerns not our purpose whether the place be known, or unknown, and intend in the first place to enquire the price of *Seed Barlie*: imagine then in the first *Place* of the first *Repositorie* (that is the part on the right hand) you see a man measuring *Barlie* out of a Sack into a Bushel, with a company of men standing about him, as is the usual manner in *Markets*, not forgetting to fancy the *Bushell* handles to be *Gold*, that so the *Idea* in some part may be related to the *Repository* in colour, as is required in the sixth Chapter:

"II. Moreover, That in the same Town liveth a *Labourer* whom you know, and must enquire out to work in your *Hay-harvest*; fancy him to stand in the second place (on the left hand) of the first *Repository*, sharpening his *Golden Scythe* on a *whetstone*, as it were preparing for such Rustical imployment: I say *Golden Scythe*, that it may participate of the colour of the *Repository*; this *Idea* agreeth with the former in sight and subject, for both *Idea's* of this *Repository* are of men, and placed on the ground.

"III. A while after you call to minde some *Aromatical Spices* you are to buy: To remember which, fancy the second place of the second *Repositorie* converted into a *Grocers Shop*, the opposite wall garnished with Nests of Boxes full of several Spices, with Titles writ upon the Boxes, after the usual mode; two foot on this side the wall, let there stand a Counter, the Wares exposed thereon you are to buy: as if the first thing you nominate to buy be *Pepper*, let a *Silver* box full of *Pepper* stand upon the further end of the Counter; if the second thing designed be *Nutmegs*, place a loose bagge of *Silver gilt Nutmegs* in the middle of the Counter; if the third be *Sugar*, set a *Sugar loafe* on the hither end of the Counter, with a *Silver* string tyed about the top, that it may in some part bear the colour of the *Repositorie*. In this case you must remember that three *Idea's* were bestowed in one *Place,* whose coherence with the *Idea* in the other *Repository,* is taken from their unlikenesse of site ; for that *Idea* was heaped on the ground, these three are placed upon a Counter.

"IV. Your next incident business is to remember to speak with a *Counsellour* of the same town (a man of a very great repute and credit for knowledge in the Law) about a friends sute depending in *Chancery* : Imagine that *Counsellour* in a Lawyers Gown, sitting in a Chair, overlooking some writings, in the first *Place* of the third *Repository :* seeing his Gown is black, you need no other attribution of colour of the *Repository.*

"V. If another new occasion present it self to minde, as that you are to buy a piece of *Black Velvet* of a *Mercer* in that town ; the second *Place* of the third *Repository* must be transformed into a *Mercers* shop, a piece of *Black Velvet* neatly laid in folds of equal length, lying on the Counter, which doth in like manner as well denote the *Repositories* colour, as the Gown of the *Counsellor* sitting in the former *Place ;* whence also is deduced a manifest relation to the precedent *Idea,* the Lawyers Gown supposed to be lined with *Velvet.*

CHAP. XV.

" *Of Dictation and Reposition.*

" MOREOVER, the practical part of this Art is perspicuously seen in the Exercises of *Dictating* and *Repetition.*

" The use of *Dictating* is, when a person is to dictate to several Scribes or Secretaries, what every one must write, so as to direct and exercise them all at once, which is frequently incumbent upon Princes and Generals of Armies in perillous times: In such cases there must be assigned a peculiar Repository to every Scribe, wherein the affairs and sentences by him to be dispatched, must be reposited in order; that is, the first Repository to the first Scribe, the second Repository to the second, the third to the third, the fourth to the fourth, and so forth if there be more: All Idea's of things to be dispatched by the first Secretary, must have some attribution of Gold appertaining to them; all Idea's of the second Repository, something of silver; of the third, something of black, of the fourth, blew, *&c.* In this case also it is permitted to place two, three, or more Idea's if it be necessary, in one place of a Repository: All businesses and sentences being thus reposited in order, & faithfully digested before in mind, it is no difficult matter by the first

Idea of the first Repository, to dictate to the first Scribe what he must write first; by the first Idea of the second Repository, to tell the second Scribe what he shall write; by the first Idea of the third Repository, to inform the third; and in like manner all the rest in their order. Again, by the second Idea of each Repository, the second sentence is facilely delivered to each Scribe: By the third, every Scribes third business; by the fourth Idea their fourth, and so forward in the residue. This is the Exercise, which by some is called the Art of Dictating.

" *Repetition* is when a man repeateth sentences spoken by several persons, so as to return each persons sentence in order as it was delivered; as if six, seven, or more friends sitting together (to experience your happy memory) do every one in order speak some sentence, to have them repeated again, after the same or a retrogade manner, which way they please; dispose the Idea's of your first friends sentences in the first Repository; of your second friend in the second Repository; of your third friend in the third, and so forward in the rest. All which being rightly disposed, you may with little trouble restore to every friend his saying, either in the same order as they were spoken, or in a retrogade or inverted order.

" I have not thought expedient to illustrate these with Examples, because I think them sufficiently explained by what hath been already said; as also, that this Exercise of Dictating and Repeating have little or no use, but vain ostentation; though I have inserted them here, it was not done as necessary, but because the knowledge of them did nor seem superfluous for such as are learned of this Art.

CHAP. XVI.

" *Of irregular Reposition.*

"I HAVE thought good to annex a few words of irregular Reposition, which is onely one Rule, that is, a real Repository may be sometimes substituted instead of a feigned, which irregularity is admitted upon a double occasion.

" First, A thing itself being at hand, may be fitly used instead of its proper Idea: As if a man sitting in his Study, light on some Book whose sheets are transplaced, which he intendeth when he goes forth of his Study, to send to a Book-binder to be amended: That Book is to be cast at the threshold of the Study, that the sight thereof may admonish him departing, to get it bound: So also if Ink be wanting, an Ink-Glass or Bottle may be set by the Book.

" Secondly, When a man must exonerate one or more Idea's, as soon as he hath reposited them; as when something offers it self to a mans mind, talking to a powerful or rich man, which he judgeth convenient to be communicated to him with the first opportunity, let him speedily reposite the Idea of that thing in the same house, field, plain, or wheresoever he then is, in some certain place conversant before his eyes, that he may be always put in mind to propound the same when occasion serves: As if he think to do some friendly office for a person absent, by preferring some business of his to the rich man; let him imagine that Friend always obvious in some determinate place in sight, not suffering the object to slip out of view, till he have curteously performed his officious enterprise. Or if there intervene some thought of buying fewel, whereof the rich man hath great plenty, let him suppose a great quantity of Wood piled up in some place not distant out of sight: This is all I have to say of *irregular Reposition.*

CHAP. XVII.

" *Of depositing Idea's.*

" HAVING spoken copiously of repositing Idea's, now I will conclude with Depositing them.

"Deposition of Idea's is, when things charged upon Memory by Idea's, are recalled, and the mind exonerated of them, the Memorial Places after such Deposition, being left empty, and prepared to receive new Idea's. Now in this case, if it happen at any time that an Idea negligently reposited, is lost or forgotten, when it should he deposited, the recovery thereof must be endeavoured by these ensuing considerations.

"First, This is always assuredly known, every lost idea did bear the colour of his Repository, either in whole or part; therefore the first thing to be inquired is, in what respect the colour of the Repository did agree with the Idea sought; by this sole consideration, forgotten Idea's are oft discovered.

"The Idea being not discovered thus, make diligent indagation for its relation to the Idea placed in the same Repository, in regard of site, subject or action, *Cap.* 14. *Rule* 4. One Idea of a Repository being known, doth easily call the other to mind, by mutual dependance whereby they were connexed together, unless there did precede very negligent Reposition.

"If still you are disappointed, happily you may find it out by repetition of such things as are especially remarkable in laying up Idea's, of which I have spoken in the 13. Chapter. That is by enquiring whether the latent Idea's was

In respect of kind,	*Direct,* *Relative,* *Fictitious,* *Scriptile,* *Compound,* *Double, treble, &c.*
In respect of subject,	*Of God,* *Of Christ,* *Of the Holy Ghost,* *Of Angels,* *Of Men,* *Of Animals.*
In respect of quantity,	*Equal,* *Augmented,* *Contracted.*
In respect of site,	*Under ground,* *Upon ground,* *Upon a Table,* *Upon a Shelf,* *Against a wall:*
In respect of attribution,	*Moving,* *Quiet,* *Giving a sound.* *Yielding a smel.*

" An Idea is oft recovered by discussing these few questions in a mans thoughts.

" If it be certain the forgot Idea was Scriptile, but the inscription is in oblivion, the first inquiry must be, whether it were a single word, proof, phrase, or sentence of one or more clauses; a single word, proof, or principal word of a sentence, may be regained by applying each Letter of the Alphabet in the same manner as is prescribed in the second Rule of Poetical Revocation, in the second Book, Cap. 3. till you have obtained the first Letter; the other Letters may be found by transcendencies and gilded Vowels; the chief Word being obtained, the rest come easily to mind.

" If you cannot yet discover the Idea, have recourse to the third and fourth Rules of Poetical Revocation, 2. Book. 3 Chap. an Idea being revocable in the same manner.

" Finally, if it continue irreparable by all these ways, let it pass, and be no longer sollicitous in search thereof: For as a Book carelesly laid up in a Study, is not many times to be found when it is sought, though you remove several Volumes; yet afterward comes to hand beyond expectation, when another Book is reached that stands by it: So it doth oft happen in this business, though an Idea negligently reposited, cannot be found when it is sought, yet at another time when a Notion reposited in the cell of Memory near it, is excited, that also of its own accord discovereth it self.

" If a man do prudently follow these Rules of recovering latent Ideas, as with *Ariadnes* thred, he will doubtless wind himself out of the Labyrinth of blind Oblivion, and with admirable facility recall to mind forgotten sentences, and vanished *Idea's.*"

A Treatise '*of cherishing Natural Memory,*' concludes the volume; in which are considered, "1. *Of such* [things] *as debilitate Memory.* 2. *Of things corroborating Memory.* 3. *Of a prescript order of life.* 4. *Of restoring a debilitated Memory.* 5. *How to discern the temperament of the Brain.* 6. *Of Dyet properly convenient to every temperament.* 7. *Of Diseases of the Brain.*"

Among those things which *debilitate* memory, are enumerated bad air, particular drinks and decoctions, bad water, particular sorts of food, repletion, too much sleep, etc. etc. In the list of *corroboratives* are, wholesome air, sweet scents, and particular meats, among which are, the *brains* of sparrows, hares, conies, etc.;—herbs, bathing the feet in warm decoctions of camomile, etc. and 'exercise in delightful places not subject to wind.' The chapter concludes with this important admonition: "*Finally, your apparel close fitted, walk leisurely abroad, if the winde* breathe a gentle gale, *otherwise within doors.*"

In treating of the "*prescript order of life,*" Mr. Willis, after very properly recommending frequent prayer for *Divine assistance,* in all our undertakings, which he enforces by a reference to the Epistle of *James,* chap. v. ver. 16, 17, directs the reader to "comb his head every day, backward, fasting" "to abstain from all evacuation by virtue of Physick except upon necessity" "*to eat twelve Raisons of the Sunne stoned, every morning without drink*, instead of breakfast" "to let his supper be larger than his dinner"* "to observe accustomed hours of eating" "to refrain from labour after meats" "to shut all the windows at bed-time," "not to sleep under the moon-beams," and "*not to lie out all night in the open air.*" The remaining rules are somewhat more rational: they recommend the morning as the best time for study,—the reading of select authors,—a devotedness to the studies which we are pursuing,—a choice of fit companions,—and occasional relaxation.

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* Mr. Willis seems to have entirely forgotten the antient distich.

Ex magna cœna stomacho fit maxima pœna ;
Ut sis nocte levis, si tibi cœna brevis.

A correspondent in the GENTLEMAN'S MAGAZINE for the year 1787, in answer to *Immemor*, who had been complaining of the weakness of his memory, advises him to follow this rule; "Instead of eating suppers, learn by heart some passages of poetry which please you, the last thing before you go to bed, and repeat them the first thing in the morning, at six in the spring and autumn, five in summer, and seven in winter. Study WATTS' *Logick*, and his *Improvement of the Mind*, LOCKE, and EUCLID. Let me know the effects of this regimen, accompanied with plain food and constant exercise, and I will then prescribe farther if it should be necessary." *Gent. Mag.* vol. lvii. part i. p. 22.

The symptoms of *cold* and *hot brains* are explained at large for the benefit of all those who are disposed to read such " phantasies." Under the article of " Dyet" we have the following *singular* passage. " Strong sweet wine, as *Muskadine, Ipocras,* drunk temperately, is most restorative for old folks, and cold and sickly persons, more efficaciously GOLD *(made red hot in the fire)* quenched therein, doth marvellously restore and exhilerate the heart. Concerning this matter, *Roger Bacon,* a famous philosopher in his Treatise of old age, hath this story; *An ancient husbandman* (saith he) *wearyed with plowing, and thirsty with his hot labour, drank water of a Cytron colour, and after he had greedily swallowed the same, was changed both in complection and strength like one of thirty years of age,* possessing more excellent discretion, MEMORY and understanding, than ever he enjoyed before, *from which time he lived eighty years in the King's Court.* Bacon, who reciteth this, thought, that water or liquor received its yellow Tincture from Gold, as he there testifieth."

After a long and fruitless search, the only particulars which we have been enabled to glean, respecting JOHN WILLIS are,—that he was author of the 'Art of Stenography,' an edition of which was published in 1628, and that he was a Fellow of Magdalen College, Oxford. Of this latter circumstance, a communication in an early volume of the *Gentleman's Magazine*, is the only evidence. The writer of this article mentions a system of short-hand, said to be invented by a Fellow of Magdalen College; and this system is the identical one published by *Willis*.

44. *Ars Memoriæ localis, plenius et luculentius expositæ, quam ante hac nunquam, una cum applicatione ejusdem ad singulas disciplinas et facultates*, 8°. *Lips*. 1620.

This book (says Morhof, in his Polyhistor) is to be preferred to all the treatises on Mnemonics, for perspicuity and arrangement. The anonymous author, as appears by the preface, was a Professor of Mnemonics in the University of Leipsic.

45. *D. Joannis Velasquez de Azevedo Fenix de Minerva y Arte de Memoria que ensenna sin maestro a prender y retenir*, 4°. *Madrid*, 1620.

46. *Artis Lullianæ, seu Memoriæ Artificialis Secretum explicitum, Oratoribus et Prædicatoribus utilissimum per R. P. F. Hugonem Carbonellum:* 8°. *Paris,* 1620.

For an account of 'Lully's Art' see No. 51.

47. *Lettera a Andrea Valieri ove si tratta della Memoria locale e del modo facile per acquistarla. MS.*

This manuscript is No. 2259 in the *Sloane* Collection preserved in the British Museum. It treats of the arrangement of different places on the walls of the rooms in a house or monastery, to the number of 173; and gives directions respecting the formation and combination of images. It is in folio, and is dated October 30, 1623.

48. *Magazin des Sciences, ou vray l'Art de Memoire, par Adrian le Cuirot,* 12°. *Paris,* 1623.

In this extremely rare volume, which abounds with curious plates, the system of *Lambert Schenckel* is given in detail; but, with many important additions and improvements.

49. *Tractatus de Memoria Joh. Conradi Dannhaweri D. & Pr. of Publ.* 8°. *Argent.* 1635.

Of this work we have not been able to procure a copy; the reader, therefore, must be contented with a memoir of the author, JOHN CONRADE DANNHAWER, a Lutheran divine, was born at Brisgau in 1603: and he was raised to the chair of eloquence at Strasburgh, in 1629. He died in this city, aged 57. Before his death he was made preacher at the cathedral church, and Dean of the Chapter; he was very zealous for the sentiments he embraced, and entered into a severe controversy with those who contended for the union of the Lutherans and Calvinists. He has left behind him many theological works of considerable reputation.*

50. *Meyssonerus in Pentagono Philosophico-Medico, sive Arte novæ Reminsicentiæ*, 4°. *Lugd.* 1639.

51. *Ars Memorativa inventiva et applicativa Raimundi Lullii*, 12°. *Cadom.* 1640.

The system of Artificial Memory of that luminary of science, Raymund Lully, was formed at a very early period; and he was, perhaps, the first modern who practised this art; but as the books on this subject have been noticed according to their dates, and we have not seen an earlier edition of Lully, he is placed among the writers of the seventeenth century.

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* Dict. Hist. art. *Dannhawer.*

"By this system, any one was enabled mechanically to invent arguments and illustrations upon any subject, and thus to reach the summit of science, at a small expence of time and labour. This *Great Art* professes to furnish a general instrument for assisting invention in the study of every kind of science. For this purpose, certain general terms, which are common to all the sciences, but principally those of logic, metaphysics, ethics and theology, are collected and arranged, not however according to any natural division, but merely according to the caprice of the inventor. An alphabetical table of such terms was provided; and subjects and predicates taken from these, were respectively inscribed in angular spaces, upon circular papers. The essences, qualities, and relations of things being thus mechanically brought together, the circular papers of subjects were fixed in a frame, and those of predicates were so placed upon them as to move freely, and in their revolutions, to produce various combinations of subjects and predicates; whence would arise definitions, axioms, and propositions, varying infinitely, according to the different application of general terms to particular subjects."* This is the general idea of Lully's mechanical logic, which would enable a person *to hold a disputation for a whole day upon any subject whatever, without knowing any thing of the matter.*

Morhof in his dissertation *de Arte Lulliana*,† has preserved an elaborate account of the system, and has given a tremendous list '*ordine longo*' of commentators on the art. The two principal expositors are *Athanasius Kircher*, in his *Ars Magna Sciendi*, [see No. 56] and *Jean Belot*, in his *L'Oeuvre des Oeuvres*, [see No. 54.]

RAYMOND LULLY was born at Majorca, in the year 1236, and on account of his great abilities, obtained the name of the *Illuminated Doctor*. After excelling as a *divine*, he applied himself to physic and chemistry, that he might be enabled to cure the cancer of a young woman of whom he was enamoured. He was stoned to death in Mauritania, where he went as a missionary in the year 1315, at the age of 80. His works which are in general very obscure, are written in a style worthy of the barbarous age in which he lived. They were collected and published at Mentz, and treated of theology, history, medicine, law, and philosophy.

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* See Enfield's History of Philosophy, vol. II. pp. 399—401.

† Polyhistor, Tom. I. Lib. II. cap. 5.

52. *Ars Mnemonica, sive Herdsonus Bruxiatus; vel Bruxus Herdsoniatus*, 8°. *Lond.* 1651.

53. *Ars Memoriæ: The Art of Memory made plaine by Henry Herdson, late Professor by Publick Authority, in the University of Cambridge*, 8°. *Lond.* 1651.

No. 52 and No. 53 are printed and bound together, consisting in the whole of ninety-two pages. The *first* is in Latin, and is a republication of a part of *Adam Brux's Simonides Redivivus*, before noticed. [See No. 37.] A Latin dedication to 'his dearest mother, the University of Cambridge' follows the title, after which we have this singular address to the reader.

" *Covrteovs Reader, If any thing in this BOOK seemeth obscure unto thee, and thou desirest Instruction in the same, and clearly to gaine the full benefit of the Art, thou mayest* *repaire unto me at the* Green Dragon, *over against Saint* Antholins *Church in* London, *where I shall bee ready to give thee sufficient Testimoniall, and Satisfaction of the Art, that the playnest and meanest Capacity may apprehend it. And so I rest thy Wel-wisher in Christ Iesus,*

Octob. 21,
1651.

HENRY HERDSON.

No. 53, the *second* article, being in English, in a small compass, and very scarce, we shall reprint the whole of it, *verbatim*.

" To my dearest Mother, the Vniversity of
" *Cambridge*, all the good of this life,
" and eternall Life.

" *My dearest Mother, let the lovingest, though least deserving of your true sonnes, present you with one sparkle of living fire, raked up in your ashes, O your own ashes! The Phœnix of Christendome, that never shall be put to death: The Angels of Heaven may sooner be extinct, than this Phœnix: Be not discomforted that the Sunne is beclouded, the Clouds are but for a time. Bee not forgetfull, nor faithlesse; but rather accept this my little Booke, the Prospective Glasse, I send you to view the Art of Memory by. If you look on it at the wrong* *end, unto the ignorant it will appear in a smaller volume, then in its poore Octavo: But if you looke on it at the right end with the right eye, it will grow bigger than your Expectation. He that hath but one eye I know will almost love it: Hee that hath but halfe an eye cannot despise it: But hee who by wilfulnesse & malice, will put both his eyes out, may stare in his conceits; and the next messe of his own crooked Broath, his hollow throat sinkes downe: he can as well crum his porrage with his eyes, as condemne my Art of Memory: And let it bee enough to choak him, that* Lumen ex ipso bono est, & bonitatis Imago. *But you who are ingenuous Academicks: The God of Heaven and Earth send you eyes, Ears, and all your Senses, with all sutable objects, that piously may delight you in them all.*

So prayeth your true Lover & Servant,

HENRY HERDSON.

" *CLAVICVLA, SIVE*

***Explicatio Libri*:**

The Key or explication of the Booke.

(C C. Chambers.)
(H. H. Houses.)
(D. Door. (W. Wall:) (S. Sided.)
(R. Repository.)

(Angule, Corner.)
(Center, the Middle of the Qvadrangule.)
(Quadrangule, 4 Corners.
(Cœlum versus, above, towards Heaven.)
(Juxta terram, below the ground, or earth.
(Paries, Wall or Side.)
(P. P. Places.

" THE ART OF MEMORY.

LECTIO PRIMA.

Partis Theoricæ.

" Hee that desireth this art or any other, must bring along with him two things.

" 1. Love of the Art.

" 2. Desire of the Art, without which no man can learn or profit in any Art or Science.

" And he must also resolve of a third thing, not to undervalue any Art or Science by the exility and meanness of the grounds of the Art. For Divinity, Law, Physick, and the seven Liberall Arts, and all other Sciences are preserved in six and twenty Letters, and so transmitted to Posterity, from one Generation to another. Now how plain and mean the six and twenty Letters of the Alphabet be, every one knoweth; so let us also consider, that most rich stones, and precious Gems are digged out of the earth, and the most stately trees doe grow out of the earth: but if art be not added, wee make no use of these. By Art the stones are separated from the chalk, and fitted by the Artificer for the most sumptuous buildings: the Diamond, Saphire, Rubie, by the hand and skill of the Artificer are inthroned in the purest Gold; also the most harmonious and Ear-pleasing Musick that quickneth up, and enliveneth the drowsie vitals, consisteth but in three Keyes, and six Notes. We might instance the like exility in the Fundaments and grounds of the other Sciences and rarest Arts: Therefore if it be thus in these, he must needs be malicious and unworthy, that will contemne *this Art of Memory* for the meanness of the Fundaments thereof, which be

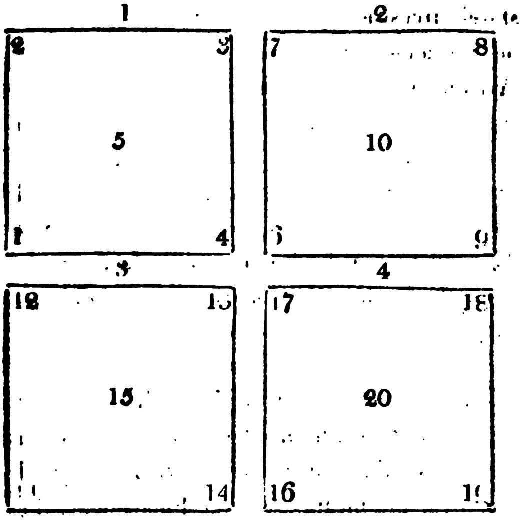
" 1. *Repositories.* 2. *Ideas.* 3. *Method.*

" 4. *The Vse or Exercise of them.*

" 1. The repositories be C. C. in H. H. which be of two sorts: either,

" 1. Naturall, which we know: or,

" 2. Artificial, which we imagine and make in our Fancie. And in both of them the Method is according to this Figure.



“ Enter in at D under the Center of the North W. or S. Then move as the Sun moveth, beginning on the left hand, which is the East side of this C. and imagine this R or C (call it which you will) in every of the 4 W W; or S S. to be every way 10. yards square from Angule to Angule, then make the R. as followeth, *viz.* the first W which is East C and ten yards four square from angule to angule) hang'd or clothed with cloth of gold, dividing it into its parts, according to the Method of its figure; in the first 10. yards square, Paries, which is 1-2-3 4 5. 2 W also 10. yards 4 square, which is South, and adorned with the purest white Linnen or Taffaty, and divided into its five parts also, *viz.* 6, 7, 8, 9, 10. The third S. or W. which is West, of the same Latitude also, and clothed with rich Tapestry, and divide into its five parts, which be 11, 12, 13, 14, 15. The fourth Paries which is North 10 yards, four square, also hanged with an hanging, beset full of Diamonds, Rubies, Saphires, and all manner of precious Gems, and divided also into its five parts, *viz.* 16, 17, 18, 19, 20.

LECTIO II.

Partis Theoricæ.

" WHEN you are perfect in this, place in every Angule of every of these Paries, and in their several Centers so many large 4 square Tables, *viz.* In the first Paries of this Repository (which is East, and hanged with cloth of Gold) in the first Angule, *Juxta terram*, you have a large foure square Table of Gold: In the North-East Angule which is *Cœlum versus* (and the second place) you have a large foure square Table, Jet or Ebony (for alwayes let the Colour of the one Table contrary the Colour of the other:) In the fourth Angule, *Juxta terram*, (which is also East by South) you have a large foure square Table of the purest white Alabaster polished: In the Center of this East Paries, you have a large square Table also made of Saphire, Marble, Cristals, Diamonds, or what you will: And thus distinguish the other three Paries, or S. S. of this R. in their severall Tables, three wayes.

" 1. By the matter they are made of, as Gold, Wood, stone, &c.

" 2. By the colour without a Carpet, as red, green, yellow, &c.

" 3. By Carpets and Coverings with their colour, as black Velvet, Scarlet, &c. and so they be distinguished, it mattereth not how they be distinguished, so long as they be all large and four square Tables in every of their Angules and Centers.

LECTIO III.

Partis Theoricæ.

" AFTER you have this perfect, divide all these Tables in their several Places (as they stand in order) both in their Angules and Centers, into five parts in the lid or top, &c. into five parts by the four feet, and Center below; the top or lid aloft is like to the Scheam of the first Paries, and so are the four foot and Center below: Now the best method, is to leave out use of four feet and

Center below, and to spare them onely for matter of the same nature, that may be added afterward, upon further study and serious deliberation: As no man can say so much at one time for his own or others satisfaction, but that he may say for his own content and others satisfaction, more and better at another time; because every sence of man is regulated according to the sence of tasting. The pallat delighteth hereafter some things both of dry and moist nourishment, above some things it liketh for present: So always in every thing what man can attain unto in all Arts, Sciences, and Languages. It must be confessed that in these, alwayes *Nos non sumus nos,* what we heretofore approved, upon serious consult, we see (though that then did passe with us and others) yet now a better way is opened unto us. *Exempli gratia,* he that is in a tolerable bondage, and therewith contented, yet when his eyes are opened, will rather throw himself in the armes of his own Mother, than the unkindly nursings of a fawning step Mother. So then having divided all these Tables into ten parts, you have in the whole Repository twenty Tables, and in every Table ten places (though at first opportunity you make use but of five in the leafe of the Table, leaving the lower five parts for use as abovesaid,) so all the divisions of the twenty Tables are one hundred places in the top, and as many in the bottome, and then you must place a Table in the Center of the flore of this Repository, dividing that as you did the other in which you have ten places more, but in the Center of this Table, tis your cheif care to place the figure of 1. and look upon it when you first come into this Repository. Now this figure of 1. is a burning Taper, placed in the Center of the top of this Table, and that you may the better remember it, imagine it as it burneth casting a sweet perfume all the room over; for the five Sences of Hearing, Seeing, Smelling, Tasting, Touching, are the five excellent Rules for imprinting things in the memory.

" LECTIO IV.

" AFTER you have thus done, in the fourth place, put so many of your acquaintance (I doubt I cannot say friends) in the severall Angules and Centers of every of the tops, or lids, or leaves of the Table (call them what you will) and be sure you know what five friends are at the first Table, what five at the second, what five friends or acquaintance at the third, &c. in all four of the Paries twenty Tables, are in this Repository, and five friends or acquaintance at every Table, for all the bottomes (*viz.*) four feet and Centers you leave empty and unused; so you have 105 friends or acquaintance in this Repository.

LECTIO V.

" THEN that you may proceed to the practick part of this Art of Memory without loss of time, take the severall characters of the figures, and place them in their order, in the right and left hand of every of your friends, as they are placed five by five, at every of the large four square Tables, in every of the Angules and Centers of the abovesaid Paries of the Repository.

" The Ideas of these you have in this Table of figures (adding according to your own fancy more Ideas of every figure, as your fancy and invention please.)

" As for the figure of 1. a Candle, a Fish, a Staf, a Dart, &c. For 2. a Swan, a Duck, a Goose, a Serpent: For 3. a Triangle, a Trident, or any thing with three legs: For 4. a Quadrangle, a die, any four square thing: For 5, a foot of a man, an Hand, a Glove, a Sickle, a Peircer, a Shoemakers Knife, &c. For 6. a Tobacco pipe: For 7 a Carpenters Iron square, a Raizer bent thus 7: For 8. a pair of Spectacles, a

Sea Crab, Twin Apples, &c. For 9. a burning Glass, a riding Stick made of a Reed, twisted at the upper end thus 9 long Peares, &c. 10, 20, 30, &c. to a thousand, may be formed from these figures, taking any round for the ciphers 000 as an Orenge, a Ball, &c. for a Candle run through an Orenge is ten, a Swan with an Orenge in her mouth is twenty : But they may more profitably be made by single Ideas, as a Crosse of Gold, Silver, Wood, &c. for ten: for twenty a Jug, Dagger, or any thing you will fancy; for thirty a Belclapper, or what you will fancy, so for all the rest of the cardinall numbers what your fancy will put, because it will be better to have single Ideas for the cardinall numbers.

This is the Theorick,
Now for the Practick Part.

" LECTIO I.

The first Lecture of the Pructick Part.

" Now before we can come to the Practick Part, or exercise it selfe, 'tis necessary that we make some little Preface concerning Ideas.

" An Idea is the figure of any thing represented, now the Ideas of things visible are very facile and ready, but the Ideas of those things that be invisible, are to be found out by rule, whereby the Ideas of all things may be had in a readinesse; and for this there is need onely of but one generall rule (which in perfecting this Art I have found out·)

" An Idea is twofold:

" First, Proper.

" Secondly, Improper.

" First Proper, which is the Image of that thing it representeth, as if I put the *Idea* of Christ to represent Christ himselfe.

" 2. Improper, as if I put the Image of Christ to represent a man; Logicians expresse this in few words; when the Image (say they) of the Individuall is put for the Individuall itselfe 'tis proper; but if it be put for the *Species* or *Genus*, 'tis improper. This Division is brought to shew that oftentimes improper *Ideas* are as usefull to stirre up the Memory as proper. A second Division of *Ideas*, is 1. Perfect. 2. Imperfect.

" 1. *Ideas* are perfect, and such be of rare and excellent things, as of *Daniel* in the Lyons Den, of *Jonah* in the mouth of the Whale, the fact of *Iudith*, *Esther*, *Ioseph*, &c.

" 2. *Ideas* are imperfect, as of obvious and vulgar things, as the rising and setting of the Sun no man admireth, because it is daily, it raineth, it raineth not, &c. The *Ideas* of these be first imperfect, but they may presently be made such by some notable attribute, that they may become perfect; as for example, the wind bloweth, the *Idea* is imperfect, but the wind bloweth with such a force, and so tearingly, that Trees are rent up from the ground, and Houses blowne downe, now the *Ideas* are perfect, it raineth, so imperfect; but it raineth so thick that all the streets and wayes are of a swim: and filled with water: Now the *Ideas* be perfect; so the Sun ariseth with a huge great body and red colour, so the *Idea* is perfect. And so wee come now to give the Rules of the Practick part: And first *de vocabulis intellectis* of words which we understand, (for we shall appoint the *Lection* for Words we understand not afterwards :) Words which we understand are remembered by *Ideas*, put in the places of the R. with some famous action attributed, received from Writers sacred, or, prophane, or invented, and feigned by our selves; (for no intellect word can be spoken but of our selves) we may presently be able to fancy the perfect *Idea* of it, and apply unto it some notable action.

" LECTIO II.

Of the Practicke Part of Sentences.

" SENTENCES, or continued Texts are committed to Memory, and retained: The principall *Ideas* of their Words being put in the Methodicall places of the R. And these being made sure of, they bring the lesse principall Words of the sentence, or text by the helpe of the naturall memory into our Remembrance immediately. Now that we may be able to perform this, we must observe foure things.

" 1. Take speciall notice of the principall *Idea* of the whole sentence. And it matters not whether it be the principall or no, so we take it for the principall. 2. Marke diligently the first Word of every sentence; for if returning to the P. P. by the eye of our fancy, we see the first Word and principal *Idea* in every sentence, the naturall Memory will suggest the rest very safely; for as in Schools, Children, that have got a taske of Verses by heart, if they misse the repeating of them, and the leafe being doubted, may be but permitted to see the first Letters that every Verse beginneth withall, they will be able to repeat every one of the Verses both forward and backward, casting their eye upon the letter that every

Verse beginneth withall, the same is done here by the eye of Fancy. 3. We must have a great care lest we take one Synonyma for another, as to say *mulier* for *fæmina*, or silver for money, or a Sword for a Rapier. 4. We must have a care that every Word be repeated in the same order it is read, or spoken; now this is done by the strong application of the mind unto every Word, and its Collocation: as also by often exercise, by which alone all this is so exactly obtained, that in a short time exercising our selves herein, we cannot but admire our progresse and successe.

" LECTIO III.

" *Of unknown Words.*

" UNKNOWN Words are remembred four wayes.

" 1. By the Harmonie of Words, which various Languages have one with another, as the English word *Riche*, brings into my mind the Hebrew word *Riach*, &c.

" 2. From the sound or eccho, as *England, Isleland*, Presbyterie, Presbyter, &c.

" 3. From the beginning of the words, as for Back, Backwards.

" 4. By way of Division, as for Parrat, a pare, and a Rat.

" LECTIO IIII.

De rebus Communibus, of businesses, and ordinary imployments.

" As in the sun-shine the shaddowes follow their bodies, so common businesses, and ordinary imployments are easily figured out by their proper *Ideas*; soone placed and certainly retained; as if a Shop-keeper would bare in mind how many yards of this or that stuffe silke, Velvet, &c. he hath, it is but fancying in the R. one of his acquaintance clothed with a suite or cloake of the same, and to hold the number of the yards in his right hand, the figure of 40. for 40. yards and if the price of it be 16. *per* yard, the figure of 16. in his left hand.

" LECTIO V.

De Memoria Concionum, To remember Sermons heard.

" WHEN wee heare a Sermon, foure Rules are to be observed. 1. Diligent attention. 2. Carefull observing the Division of the Parts. 3. Methodicall Collocation of the Parts in the Places of the R 4. serious Meditation on the *Ideas.* If there be but two parts of the Text, place the first in the Center of the South, and the second in the Center of the North; if three parts, place them in the three Center Tables of the East, South, and North; if 4 in the fourth Center Tables of the fourth Paries. If five Parts, place the fift Part of the Text in the Center of the Flore; if yours be six Parts, Place the sixth Part in the Center Table of the East W. of the second R. if seven Parts, place the seventh in the Center T. of the South Paries, in the second R. and so on: after this manner, if there should bee more Parts, leaving the matter of every part to be expressed, first with its part, so far as the places will reach in the Center Table, which being filled, proceed unto the four Tables of the four Angules, according to their place and number.

" LECTIO VI.

De memoria Historiarum; *to remember Histories.*

" HISTORIES be very easie to be remembered: three rules are to be observed.

" First, Propound unto your self the History, and Authour of the History, and read some of it in the morning, some of it in the afternoon, and leisurely, and seriously imprint into your mind, the substance and chief passages of the History by Ideas put in some apt Repository, and you shall have it in readinesse by once or twice thinking of it.

" Secondly, When you are to remember divers Histories, they are all to be expressed by their singular and proper Ideas, in places by themselves; After this manner you may remember Scripture Histories in six, seven, eight conclaves; for example, you may divide the book of *Genesis*, into the History of *Adam*, *Noah*, *Abraham*, *Isaac*, *Jacob*, *Joseph*.

" Thirdly, If you desire leisurely, and with exactness to learn a History, divide it into principall parts, which you may represent by certain persons, giving of them convenient motion; for example, you may remember the History of

Joseph if you place the known men of the History, as *Joseph, Jacob, Josephs* Brethren, and *Pharaoh.*

" LECTIO VII.

De memoria Citationum; *to remember Scripture-Quotations.*

" Take for every book of the Bible some friend or acquaintance of the name, near the name, or for the name, as one *John* for the Gospel of Saint *John;* one *Genne* for *Genesis;* some patient pious man for the book of *Job,* if you place not one *Job* you know, &c. Then alwayes take the right hand for the Chapter, and left hand for the Verse.

" LECTIO VIII.

For sure imprinting the Ideas of all things in the memory.

" There be two sure directions:

" The first is called Paradise, which is the applying the most delightfull things and objects to every of the five Sences, *viz.* what most affect eth Hearing, Seeing, Smelling, Touching, Tasting.

" The other is termed by the name of Hell, which is the applying of the most odious and loathfull objects to every of the five Sences.

" LECTIO IX.

Of Shorthand-writing.

" THERE is a kind of a Short hand writing in this Art, by the Ideas of letters objected to the eye of the fancy, as the Alphabet is objected to the sight of the bodily eye. Now for brevity sake, using colours instead of vowels, the eye of a nimble fancy will read any thing by Ideas thus figured, as readily as if it were written in a book, and will retain what thus is written. Now the Ideas of this Alphabet be these, and such like as your fancy best pleaseth to make choice of; *A.* a pair af Compasses so made, *b.* a Lute, *B,* a Bow bent with an arrow in it, *C.* an Horn, &c. and so in like manner, take Instruments or any kind of Ideas for the rest of the letters, which be like the letters; and instead of vowels use these colours, *A.* for white, for *E.* blew, or green, for *I.* red. for *O* black, for *U* Yellow."

54. *L'Oeuvre des Oeuvres, ou le plus parfaict des Sciences Steganographiques, Paulines, Armedelles, et Lullistes, par Jean Belot*, 8°. *Lugduni*, 1654.

This worrk is an enlargement of Lully's Art of Memory, and is much superior to the original system.*

55. *Fax Nova Arti Memoriæ localis accensa*, 8°. *Lips.* 1654.

This *new torch* does not shed a 'flood of light' upon the subject of local memory, but its rays if collected and concentrated, will serve to direct the steps of the mnemonic student.

56. *Athanasii Kircheri, Ars Magna Sciendi in xii Libros digesta, qua nova et universali methodo* [*Lulliana*] *per artificiosum Combinationum contextum de omni re proposita plurimis et prope infinitis rationibus disputari, omniumque*

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* Morhof, in Polyhist.

summaria quædam cognitio compararari potest, fol. Amstelod. 1669.

This curious work contains nearly *five hundred* closely-printed pages, and exhibits a complete exposition of Lully's Art, as applied to the various branches of human learning. [See No. 51.]

Athanasius Kircher, was born at Fulda, in the year 1601, and was much celebrated as a mathematician and philosopher. He commenced his noviciate in the Society of the Jesuits, in his seventeenth year, among whom he distinguished himself by a surprising proficiency in literature and science. His works amount to *twenty-two* volumes, *folio*, *eleven* in *quarto*, and *three* in *octavo*!!! He died in the year 1680.

57. *Variorum de Arte Memoriæ Tractatus Sex*, 8°. *Franc. et Lips.* 1678.

The authors of these six tracts are, 1. Lambert Schenckel. 2. Johannes Austriacus. 3. Hieronymus Marafiotus. 4. J. Spangenberg Herd. 5. Fr. Mart. Ravellin. 6. De Memoria naturali fovenda a Johan. Willisso. The whole of which have been already noticed, except the tract of Johannes Austriacus, and in this there is nothing of a novel description, or worthy of a particular remark.

58. *The Divine Art of Memory: or, The Sum of the Holy Scriptures, Delivered in Acrostic Verses, so that the Contents of the whole Bible, may readily be remembered; and in what Chapter, each particular passage is recorded. Written originally in Latine, by the Reverend and Learned John Shaw, and made English by Simon Wastel,* 12°. *Lond.* 1683.

This rare and curious little volume, containing more than 200 pages, is a translation from Shaw's "*Bibliorum Summula seu argumenta singulorum capitum Scripturæ Canonicæ utriusque Testamenti, alphabetice dictichis comprehensa,* 8°. *Lond.* 1621-23.' a work which we have not been able to meet with. The present 'Divine Art' seems to have been first published in the year 1623, under the title of 'The true Christian's daily delight; being a sum of every Chapter of the Old and New Testament set down alphabetically in *English Verse,* that the Scriptures we read, may more happily be remembred, *etc.* 12°. Lond. 1623.' This work was again published under the Title of '*Microbiblion*; or the Bible's Epitome, etc. 12°. Lond. 1629.'

The Prolegomena to this metrical version and abridgment of the Old and New Testament, are two Epistles Dedicatory; one from T. B. and the other from S. W. [Simon Wastell], and the Translators's Preface to the reader from the same person. All these are curious, and worthy preservation, as they explain the plan and objects of the work.

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1. *Epistle Dedicatory from T. B.*

"To the Honoured
PAUL WENTWORTH, Esq.

Worthy Sir,

THIS laborious and useful Enchiridion *was first taught to speak* English *in the* Free School *of* Northampton, *being* translated *by the painful hand of Mr.* Wastel, quondam *School-master there, (whose Memory, like a Box of precious Oyntment, still retains a sweet* fragancy *in those Parts;) And was there by him humbly recommended to the Patronage of a Noble Lord, Baron* Spencer *of* Wormleighton, *especially upon the account of his* indulgent Favours *towards that eminent* Seed-Plot *and* Nursery *of Learning; being now therefore again to salute the Light in a new Edition,* to *whom more pro-*

perly should it address it self than to your honour'd Name, *who have been a liberal* Benefactor *to the same* School *wherein it was so happily educated, as to be rendred serviceable to our Country-men in general; whereas before, like some rare Jewel, whose value is known to none but the skilful* Lapidary, *it was justly admired, and made use of only by the Masters of the Latin Tongue.*

'Tis one of the greatest Uses, and most laudable Designs of Epistles Dedicatory, *to pay the Tribute of a* Publick *acknowledgment to generous Vertue, and the noble* Encouragers *of Learning. But since 'tis well known you as little* desire *Commendations as you do greatly study to* merit *them, and delight rather to* be *Good, than* told so; *All I shall say, is, That by endowing the* Muses, *you have made* Learning *your* Debtor, *which never fails to be a grateful* Pay-master; *and that* your *example will confute our* Roman *Upbraiders, and let them know, That 'tis no Discouragement to* Good Works, *to believe, they are not* Meritorious, *and that* Charity *is not grown* Cold, *since she left off to be* Blind.

" *The* Piece *that here presents it self to our view is indeed* small, *but may prove* great *in use; as it will help both to understand and remember what is* contained in Sacred *Scripture,* *and make persons better acquainted with that* Blessed Book *which* alone *can bring us acquainted with the* Almighty.

"*That it may conduce to these ends; and particularly, that your* worthy Selfe *may, by a Belief, Adherence, and Practise of those Divine Dictates, enjoy an everlasting* Memorial *in the* Book of Life, *is the Prayer of*

"Your Servant

"*T. B.*"

2. *Epistle Dedicatory from Simon Wastell.*

"TO THE

"Right Honourable

"His singular Good Lord,

"SIR ROBERT SPENCER, Knt.

Baron *Spencer of Wormleighton*:

"*S. W.* wisheth all Happiness Temporal and Eternal.

"*Right Honourable,*

"THE manifold Favours received from your Lordship ever since my first placing in the Free-School of *Northampton*, as also Your Honour's late promised Assistance to help the said School to that Right whereof it hath been these many Years unconscionably defrauded, hath caused me many times to which that some good occasion might be offered unto me, whereby I might witness not only unto your Honour; but also to Posterity, how much I confess my self obliged unto you for the same. And therefore; having taken some Pains to turn the Contents of the Bible briefly into English Meeter; for the help of weak Memories; (being incouraged thereunto by the Perswasion of divers of my godly learned Friends, when they saw some Entrance made thereinto.) Your Honour being in the very Frontispiece of my dearest and worthily most honoured Friends, I determined to dedicate the same, together with my humble and best Service, unto your Honour; beseeching you, that both my self and it, as also our poor wronged School, may still be patronized and shrowded under the shadow of your Honourable Protection: so will I not fear what my back Friends can say to my Book; nor what they can devise or do against my self; so also shall your Honour (in respect of the School) have the praise of the Prophet, to be called, *A Builder of that waste place, and a Raiser up of the Foundation thereof; a Repairer of that Breach, and a Restorer of those Paths to dwell in:* And so be honoured and esteemed of me and all my Successors as the second Founder thereof, and be parallel'd and equalized with *Thomas Chipsey*, who was the first: For,

> “ *Non minor est virtus quam quærere parta tueri.*

> 'Tis no less pious, things lost to regain,
> Than for first Founders to give to maintain.

“ Vouchsafe I beseech you (my most honoured Lord) as cheerfully to accept of this my poor Present and Widows Mite (being a Pawn and Pledge of my ever dutiful and thankful Mind, as *Artaxerxes* is said to have received an handful of Water from the poor Country-man, whose Ability would afford no better a Gift. So will I ever pour forth my Prayers unto the Almighty Preserver of Mankind, the Giver of every good Gift, that he would be pleased to vouchsafe unto your Honour, and to all your Honourable Progeny, health of Body, length of Days, with Increase of Grace and Honour in this Life, and the Fruition of eternal Blessedness in the World to come.

“ *Your Honours*

“ *ever to command*,

“ SIMON WASTELL.”

3. *The Translator's Preface to the Reader.*

"THE
"Translator's Preface
"TO THE
"READER.

"*NOT long ago (Christian Reader) there was published a little Book in Latin Verse, called* Bibliorum Summula, *set forth by Mr.* John Shaw, *(a man, whom both for his Learning and Gravity, as also for our old and antient acquaintance (being School-fellows in* Westmerlend *fifty years ago, and both of* Queens *Colledge in* Oxford) *I did, and do much esteem and respect.) This Book I perceived to be much applauded of the godly learned Ministers, and of many other Scholars that had seen and read the same. And therefore, after he had sent me one, as a token of his love, I began to study how I might teach it to speak English, being as desirous to benefit the unlearned, as he was the learned; and having translated the Books of*

Moses, *and offered them to his and to other learned and grave Ministers view and censures, they did by their persuasions so prick and spurr me forward, that I could not give over, untill (through God's Assistance) I had gone through both the Old and New Testaments. I confess I have not precisely tyed my self to his Method and Manner, because the English tongue is far more copious than the Latin; but have taken liberty (according as the contents of each chapter were longer or briefer) to conclude them sometimes in two, sometimes in four; sometimes in more Disticks, with as much brevity (observing perspicuity) as I could. I have purposely laboured to speak plainly to the capacity and understanding of the simple and ignorant, rather than by Poetical strains to please the Ear, and the Eye of the curious learned Readers. Thou hast also not only the contents of every Chapter set down in order Alphabetically with figures to direct thee unto them, but also figures in every line to direct thee to the Verse where thou shalt find that presently which thou desirest to know, without reading over the whole Chapter. Thou hast also a Chronological observation of times from* Adam *to* Christ, *and from* Christ *to* Antichrist. *Thou hast also the names* *of all the Books of the Bible, as they follow in order.*

“ *Lastly, thou hast comforts and encouragements against the feare of death, called the old mans* A. B. C. *If it shall please thee (gentle Reader) when thou hast read or heard a Chapter, to read over the contents in meeter once or twice, thou mayest be able to rehearse and say the said contents by heart, and so in short time be acquainted with the History of the whole Bible. If any be so zealously affected with the knowledge of the Scriptures, as the Lord* Cromwell *was, who (as Master* Fox *recordeth in the Book of Martyrs, of the fifth Edition, page* 1075, *got by heart all the new Testament of* Erasmus *his Translation in his journey to* Rome, *he might in short time get by heart these brief contents of the whole Bible. If therefore the* Law of God be thy delight, *(as it was* Davids) *this little Book will be a comfortable companion, whether thou walkest abroad, or stayest at home. And finally if thou reapest any increase of saving knowledge, justifying faith, or holiness of life, by these my poor labours to the Edification and Salvation of thy Soul, have all that I desire, saving that I would entreat thee to ascribe the Praise and Glory of all to God,* *and to afford me thy charitable Censure, Well-wishings, and Prayers.*

" Thine in any Christian service
" that he can perform,
" *S. W.*"

A chronological table follows this preface, from the Creation of Adam to the departure out of Egypt, and the names of all the Books of the Bible, with the number of the Chapters. The specimens selected from the *Divine Art,* are the whole book of Genesis, and the old man's A. B. C.

1. *Old Testament.*

GENESIS.

1 ALL things in[1] Heaven, in Earth and[2] Seas,
our great[3] *Jehovah* makes:
He bade them[28] grow and multiply:
and Man Gods[26] Image takes.
2 BY him in[1] six days all were[2] made;
the[3] Sabbath,[4] Man of Dust:
Paradise[8], [24] Wedlock; Names[20] impos'd:
The Fruit forbear[17] Man must.
3 CLosely the subtil[2] Serpent tempts;
they[6] eat; are[10] bare; arraign'd:
The promis'd[15] seed; their strife, earth[17] curst,
Man[16] punish'd,[21] cloath'd,[24] disdain'd.
4 DUE[3] Sacrifice the[4] Brothers bring:
fierce *Cain* good *Abel*[8] slays:
Cain[12] vagrant made, *Lamech*'s[2] great wrath:
Seth liv'd in holy days.
†987 5 E*Nnoch*†, blest *Enoch,* is by God,
[24] from Earth to Heaven translated:
The Patriarchs[1] lives: lines:[2] years, & death,
to[3] *Noah*'s time related.
6 FAir forms make[2] matches: monstrous men
in monstrous[5] Sin abound:
This[7] brings the Flood but *Noe* and his,
(i'th Ark)[8] God's favour found.

7 GOD [1] sends all pairs, and *Noe* repairs
unto the [5] Ark, wherein *1656
They [7] being shut, the [8] flood o'reflows,
and drowns [13] all flesh for sin.

8 HEav'ns [1] wrath aswag'd, the flood is swag'd:
the [7] Raven and the Dove:
Noah [18] goes forth, [20] doth sacrifice:
God [21] makes two leagues [22] of love.

9 I*Ho vah* [1] gives laws, of Increase,
[2] Fear, [4] Murther, [3] Meat, the Bow
Blood is [4] forbidden, *Noe* made [21] drunk,
mock'd, [25] *Cham* accurs'd also.

10 KNow [1] here of *Noe,* [2] and of his [21] Sons
the mighty [6] Generations.
Nimrod first [8] Monarch: here begins,
dividing of the [32] Nations.

11 LEarn here [1] one language, at the first;
confusion [5] *Babel** rent: *1787
Mark [10] *Shem* and *Terah*'s [27] Progeny,
to *Haran* [31] *Terah* went.

12 MAke hast, O [1] *Abram,** leave thy land; *2023
I will [2] preserve thy life:
A [10] Famine; Fear [11] doth make him fain:
the King [14] restores his Wife.

13 NOW *Lot* and he [1] richly [2] return;
but discord [7] parts them both;
Lot's lot is [10] sinful *Sodom*'s Soil;
to *Hebron* [18] *Abram* go'th.

14 OPpos'd by four, [1] five Kings are slain,
Abraham [14] rescues* Lot: *2030
Melchizedek [20] receiveth Tythes;
spoils, *Abraham* [23] takes not.

15 PRomise [1] of Seed chears [2] *Abraham*,
which he believes [11] most true:
But first his Seed [13] must Servants be,
And [16] then their Foes subdue.
16 QUarrelling *Hagar* now with [4] Child,
Her Mistress doth disdain:
The Angel bids [7] she should submit,
And turn to her again.
17 REnewed is the [4] Covenant sure:
Their names are [15] chang'd, they blest:
†2440 *Abraham* here is † [12] circumcis'd,
Ishmael[25], and the rest.
18 SAra [12] for laughing is [13] reprov'd:
Sodoms [21] Destruction shewn:
Abraham prays, for [32] ten just men,
it may not be o'rethrown.
19 TWO Angels [3] *Lot* doth entertain,
Sodomites fiery [24] Slaughters:
Lot's Wife a [26] Pillar of Salt is made:
he drunk, [35] defiles his Daughters.
20 UNwares the King takes [2] *Abrams* Wife:
God him, he *Abraham* [9] rates,
Restores, [11] reproves [16], makes [14] rich: he [17] prays,
Then heal'd are all Estates.
‖2050 21 WIth Joy *Sarah* her [2] Son ‖ embrac'd:
the [9] scoffing Lad and's Mother
Cast [14] out, distress'd, [17] refresh'd, Peace sworn
between the [22] King and th' other.
‖2061 22 UP *Abraham* rose to [3] slay his ‖ Son:
the Angel [11] holds his hand:
The Ram is [13] offered up for him:
His Seed shall be [17] as Sand.

23 WIth Tears did [2] *Abraham* bewail
the death of || *Sara* old : ||2085
Macphelah bought to [16] bury in,
Which *Ephron* to him sold.
24 A*Braham* [2] sends : the [12] Servant prays.
asks [17] Water of the || Maid : ||2088
Gives [22] gifts, brings [61] home to *Isaac* her,
on whom [67] his love is staid.
25 BY [1] *Ketur Abram* had [2] moe Sons :
he [8] dies, and [21] *Isaac* prays :
Two [22] Twins do strive : Birth-right is sold,
and *Jacob* || Pottage [34] pays. ||2113
26 C*Anaan* [3] promis'd, Famine [1] sent :
his Wife he [7] Sister calls :
The [9] King reproves, he [13] rich, digs [18] Wells :
Sons Wives him [35] grieves and galls.
27 DIm-sighted [3] *Isaac* Venson craves :
|| Son [30] hunts, and comes too [21] late ; ||2140
Jacob [27] is blest : *Esau* [38] doth weep :
And's Brother [41] deadly hate.
28 E*Sau*'s ungodly [9] Marriages :
Jacob is [10] sent away :
A Ladder [12] sees, and [18] consecrates
a stone [22] whereon to pray.
29 FOr *Rahel Jacob* [13] seven years serves :
but [23] *Laban Lea* || gives, ||2185
He [28] serves seven moe : *Lea* [32] conceives,
but *Rahel* [31] barren lives.
30 GRiev'd *Rahel* [4] gives *Jacob* her Maid :
so [9] *Lea : Jacob* [31] hir'd.
Ioseph is [24] born : by *Jacobs* [37] art,
his Sheep and Wealth admir'd.

*2205 31 HEre Gods bids * *Jacob* [3] home return,
the Idols [19] *Rahel* takes:
Laban [26] complains: charg'd [24] not to chide:
at *Gilead* [44] peace he makes.
32 JAcob is by an [1] Angel cheer'd:
[7] fears; [9] prays: confest [10] his faults:
Sends [13] gifts, doth with an [24] Angel strive,
and [25] ever after haults.
33 KNeeling faint *Jacob* [4] *Esau* meets:
they [4] weep, they kiss: he [11] takes
The gifts: [16] departs: a [19] field is bought;
Jacob an [20] Altar makes.
||2213 34 LEwd *Shechem.* [2] *Dinah* || doth deflour.
and craves her [8] for his Wife.
The People [22] circumcis'd are [25] slain:
good *Jacob* [30] fears his life.
35 MAking an [1] Altar *Jacob*'s blest:
he [2] purgeth Idols all:
Reubens [22] foul Lust: a [20] Pillar pitcht:
a [8] threefold [18] Funeral[29]. ([7] wealth:
36 NOw [1] *Esau*'s Wives: Sons: [15] Dukes and
[6] departure: [6] habitation:
Are here set down: [24] mules are found out:
the [31] Kings of Edom's Nation.
37 OF's Brethren [2] *Joseph* makes Complaint:
dreams [5] twice: *Jacob* [32] deceiv'd:
Joseph is put [24] into a pit:
is [28] sold: his Father [34] griev'd.
38 PLedge [2] sending: [3]*Juda*'s Wife and [4] Sons:
†2222 he in to [18] *Thamar* went†:
Would [24] have her burnt: then [26] clears her more:
two [27] Twins to him are sent.

39 QUickly good *Joseph* is [4] prefer'd:
of's Master much [6] approv'd:
He flat [8] denies: his Mistriss [14] lies†: †2227
he is [22] in Bonds [23] belov'd.
40 REhearse your [18] Dreams: O Butler! thou
a happy [13] Man shalt be:
Have me [14] in mind. O Baker! mark,
the [19] Gallows groans for thee.
41 SAd *Pharaoh's* [26] Dreams expounded are:
and *Joseph* [40] grac'd as King†: †2236
Against the [48] Dearth hoards up, [49] sells Corn†: †2238
His Wife two [50] Sons doth bring.
42 TEN sent for [3] Corn: [24] imprison'd are:
releast [25] and sent away:
For *Benjamin* [24] a Pledge is pawn'd:
but him [38] doth *Jacob* stay.
43 UNwilling *Jacob* [13] sends his Son,
they [15] Presents bring to Court:
Joseph [27] confers: his [22] Brother calls:
and [32] feasts in [33] woundrous sort.
44 WIthin the Sack of [12] *Benjamin*,
is Cup and Coin (they paid)
They fear, [6] confess: the Fathers Pledge,
for [33] *Ben*. would now be staid.
45 UNto his Brethren [1] *Joseph's* known;
he [2] weeps, is [5] sent before,
For Father [9] sends, the King [17] consents,
he goes, and [28] grieves† no more. †2240
46 WIth *Jacob* (after [1] Sacrifice)
God will [3] go on the way.
Him *Joseph* [28] meets and greets, they [29] weep;
he tells them [34] what to say.

47 AGed *Jacob*, with all his [1] Sons,
before [7] King *Pharaoh* stand;
Goshen[11]: all's bought save the [22] Priests Land;
*2255 bury * me [30] in my Land.
38 BLest *Jacob* sick [1] is visited;
†2280 Gives *Ephrim*† [19] Præminence:
Blesseth[29]: relates [21] the Promise made:
foretells [21] their going thence;
49 CAlling his [1] Sons he blesseth [8] them:
‖2300 doth future things ‖ declare:
Gives charge about his [29] Burial:
of Soul the Lord takes care.
50 DOleful [3] lamenting made [10] for him:
Troops bring him to his Grave:
2310 The Brothers [18] fear: he makes them [25] swear
his Burial there to have.

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2. THE OLD MANS *A. B. C.*

Ye Saints on Earth be of good cheer,
The Darts of Death ye need not fear.

1 *Cor.* ACcount'st thou death a dreadful thing,
15. 55. Which hath by Christ now lost its sting?
1 *Thes.* BE sure, as Spring doth Winter blasts;
4. 17. So follows death, a life that lasts.
1 *Cor.* COffin this corps and lay't in grave,
15. 53. A glorious rising it shall have.
2 *Tim.* DEbt due to God I hereby pay,
4. 6. By dying at th' appointed day.

EXceeding welcome Death's to me, *Heb.* 9.
All men must dye, no man is free. 27.
FUll happy man that dyes in Faith: *Rev.*
His good works follow him, Christ saith. 14. 13.
GLad are the Saints dissolv'd to be, *Phil.* 1.
To live with Christ, his face to see. 23.
HE well may quake and fear to dye, *Rev.* 6.
That in his filthy sins doth lye. 16.
IN Death is gain, it's gate of Life: 1 *Thes.*
Last night; a sleep; and end of Strife. 4. 14.
KNown God's Ambassador to be, 2 *Pet.*
Death will I meet; I will not flee. 1. 14.
LOrd paramount of death hath kill'd *Heb.* 2.
Death by his death, and law fulfill'd. 24.
MUse oft upon thy latter end, [mend. *Psal.*
The thoughts of Death will make thee 90. 12.
NOught but Christ's death doth sin remove *Rom.*
Admire the greatness of his love, 5. 8.
OF earthly Pilgrims, death from God 1 *Cor.*
Makes us possest of Heavens above. 5. 6.
PAss not for death, I daily die, 2 *Cor.*
Why then doth death me terrifie? 15. 31.
QUiet thy self, thy day of death, *Eccles.*
Excells that hour thou first took breath. 7. 1.
REceiving but our due deserts, 1 *Pet.*
Why then should death afflict our hearts 2. 20.
SIth God from all eternity, *Heb.* 9.
Hath so decreed that all must dye. 27.
THat deadly foe (last foe of all) 1 *Cor.*
At last shall have a deadly fall. 15. 26.
VAnquished death I wish were nye, *Rom.*
It ends a Christians misery. 7. 24.

JOHN SHAW, according to A. Wood,* was a Westmoreland man born, and became a student of Queen's College, Oxford, in 1579, at the age of 19; he took one degree in Arts, left the College, and at length became Vicar of Oking, or Woking, in Surrey, where he was had in esteem, by many for his preaching, and by some for his *Poetry*. His works, in addition to that already mentioned, were: (1.) The blessedness of *Mary*, Mother of Jesus: a Sermon on Luke i. ver. 28, and 45, 8° Lond. 1618. (2.) The comfort of a Christian, by Assurance of God's Love to him, *written in verse*. (3.) The Complaints of a Sinner: the comfort of our Saviour—in verse also. These two last are printed with the Sermon.

SIMON WASTELL, was, according to Wood,† a Westmoreland man born, and descended from those of his name, living at Wastellhead in the same county. He entered as a student of Queen's College, Oxford, in 1580, or thereabouts, and took one degree in Arts five years after; at which time being accounted a great proficient in Classical Learning and *Poetry*, he was made Master of the Free-School at Northampton, whence by his sedulous endeavours, many were sent to the Universities. He seems to have been a fellow-student of Shaw, and on terms of strict intimacy with him.

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* Athenæ Oxon. vol. i. col. 487. † Ibid.

59. *Ars Magna et admirabilis Speciminibus variis confirmata, qua Pandectarum Tituli eorumque præcipua materia ope Figurarum emblematicarum, brevissime, jucunde et tenaciter, memoria imprimi, firmiter contineri, et opportune in usum transferri possunt : In maximum commodum legis Studiosi*, 8°. *Lugd. Bat.* 1695.

This anonymous work contains an ingenious and very full application of the local memory, to the fifty books of the Roman Pandects, and to the various titles and subdivisions of each book. To the Preface is appended the signature of R. C. The title is a complete bill of fare, and is a good model for all those who render this ‘ annonce’ a *table of contents*, instead of a title-page.

60. *Copia Speciminum Artis Memoriæ*

Bruxellæ, Leodii, Tornaci, et alibi editorum, 8°. *Leodii*, 1697.

This small pamphet contains an account of the different exhibitions of L. Schenckel, at the various cities enumerated in the title.

61. *Ars Memoriæ vindicata, auctore D. Jo. Brancaccio, accessit Artificium Poeticum ad Scripturas Dirinas in promptu habendas memoriterque ediscendas accommodatum*, 8°. *Panormi*, 1702.

This is an excellent and useful little work; for, in addition to an explicit detail of the principles of the art, it includes instances of wonderful memory, in particular individuals, from the time of *Adam*, to A. D. 1690, and a list of writers on the subject. To neither of these sources, however, are we indebted for *any of the materials* in the present work, not having been able to procure more than a transient inspection of this rare and curious volume.

62. *The Art of Memory. A Treatise useful for all, especially such as are*

to speak in Publick. By Marius D'Assigny, B. D. 8°. *Lond.* 1706.

This is the *third* edition of D'Assigny,* and is ornamented with an 'elegant engraving on copper,' representing *Jupiter* with his *fulmen* reclining on a cloud;—the winged *Hermes* is seen flying with a caduceus, and a scroll in his hands, on which is inscribed *Ars Memoriæ.* Three pedestals, the centre one circular, and the others square, occupy the fore ground of this beautiful picture. On one pedestal stands *Minerva*; in the centre *Hercules Anglicus;* and the remaining pedestal is adorned by the *Gratiæ* DECENTES, in their usual costume. At the foot of these illustrious personages are seen *eleven* 'human forms divine,' from whose ears issue *eleven threads* or lines, all meeting in one point, —the mouth of *Hercules Anglicus* ! ! !

We have been thus particular in describing this frontispiece, in the hope that some one who is 'pretty far gone' with the mania of *illustrating*, may be induced to seek for it; for, here, he might certainly indulge his favourite pursuit without a chance of injuring the book; a rare occurrence in the annals of the print-ferret. It is not, perhaps, known to all our readers, that a passion for books illustrated or adorned with *numerous prints*, exists to a very great extent; and, that the most valuable books are deprived of their engravings merely to *illustrate* some favourite production, by the portraits of the persons named in it. Mr. Dibdin, in his *Bibliomania*, p. 605, notices some curious examples. *Seven hundred* prints were collected by a lady to illustrate SIX CHAPTERS *in Genesis:* and 650 portraits by another person to ornament *Scott's Edition of Dryden*. The sum of £2000, was expended by the late *Mr. Crowles* in illustrating *Pennant's London*, which book he bequeathed, in the true spirit of *virtu*, to the British Museum.

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* The first edition was published in 1697.

The address 'To the Young Students of both Universities,' which precedes this Art of Memory, we recommend earnestly to the present race of Oxonians and Cantabs, as it is peculiarly applicable to their present state.

The following are the contents of this volume.

" Chap. 1. Of the Soul or Spirit of Man.

" Chap. 2. Of Memory, its Seat, and Excellency.

" Chap. 3. The Temper or Disposition of the

Body best and worst for Memory, with the natural Causes and Reasons of both.

"Chap. 4. Some General and Physical Observations and Prescriptions for the remedying, strengthning, and restoring a Memory injur'd by the ill Temper of the Body, or the Predominancy of one of the four Qualities in the Brain.

"Chap. 5. What is very much prejudicial to the Faculty, Habit, and Practice of Memory.

"Chap. 6. Of such Natural Things as may be assisting to, and may comfort Memory, from the Procurement of Nature, and the Contrivance of Art.

"Chap. 7. Rules to be observed for the Acts or Practice of Memory.

"Chap. 8. Rules to be observ'd to help our Remembrance of things that we desire to preserve in Mind.

"Chap. 9. Of Artificial or Fantastical Memory or Remembrance."

This book upon the whole (the dedication excepted) is rather dull, and not very profitable. In the *fifth* chapter, at the fifteenth section, we are told that "all such Motions of the body as cause giddiness or swimming in the head, are destructive to the memory. *Therefore we should have a special care to avoid* FALLS *from* HIGH PLACES, *turning round* [as the Dervishes we suppose] *or Blows upon the hinder part of the Head!!!*"

The *sixth* chapter abounds with receipts for 'comforting the memory' taken principally from the early writers on this subject. A few of these we shall extract for the benefit of such as are inclined to use them.

"1. *Sneezing Pouders.*

"Sneezing Pouders well prepar'd are of great use, but may prove pernicious if any thing be offensive to the Brain in the Composition. Dried Leaves of Marjoram, Sage, Rosemary, the Roots of the Herb *Pyrethrum,* of Lingwort perfumed with Musk, are a choice sneezing Pouder, to comfort the Brain and Memory. And the Herb *Galangal* well dried, and reduced to Pouder, is very useful to strengthen Memory. Another good sneezing Pouder may be made of *Pepper,* with the Herb *Condisi,* white Lingwort, and Lillies, with some perfumed Gums. *But we must have a care not to offend Nature by a too frequent use of these or other Snuffs, which may prejudice the Brain.*

"2. *Plaisters to prevent a decay of Memory.*

"Divers Plaisters, when we find a decay in Memory, may be useful for helping the Brain: *As* a Plaister made of Mustard-seed, and clapt to the hinder part of the Head, or the Oil of Mustard-seed when apply'd to that part. Or if you please to be at greater Expence, take Florentine Lillies, the Herbs *Hermodactyle* and *Pyrethrum,* leaves of the wild Vine, Pigeon-dung, Mustard-seed, of each an Ounce; mix them with *Moschata* Nuts, Spice, Cloves, Cinamon, and Pepper, and make a Plaister; which you may likewise apply to the hinder part of the Head, and you will find it increase and help Memory. And a certain famous Author assures us, that the *Gall of a Patridge anointed about the Temples* does wonderfully strengthen the Seat of Memory; as also the *Brains of Birds and Fowls roasted,* and chiefly of *Hens* are not useless for the same purpose.

" 3. *A pouder for the Memory.*

"Take the Seed or Leaves of *Orminum,* and reduce them to Pouder, and every Morning take a small quantity of a Glass of Wine. And they say that the *Shavings or Pouder of Ivory* produce the same effect, namely, the corroborating of the Brain and Memory; as likewise a Grain of white Frankincense taken in a Draught of Liquor when we go to Bed, dries up the offensive Humours of the Brain. And it has been observ'd, that the Application of *Gold* to that *Sutura,* which divides the Seat of Memory from the other

Closets of the Brain, *strengthens the weakness of the Head, drives away all Pain, and has a wonderful Effect on the Faculty of Memory.*

" *An ointment.*

" A famous Author tells us, That a firm and constant Memory, and quick Apprehension, many great Men have used this Medicine. Take Roots of wild Bugloss, Roots of Valerian, or Setwall, of each four Ounces; Roots of Rue two Ounces; reduce them to very fine Pouders: then take Juice of Ey-bright, Clary and Verven, of each four Ounces: strain the Juices well through a Cloth; then mix the Juices together, and the Pouders apart: afterwards take the Essence of Anacardi, or Cassia-nuts one ounce, and make a Pouder as before. Also take Bird's Tongue, i. e. Ash-keys, and make a very fine Pouder: Then mix all the foresaid things together, viz. the Pouders and the Juices, and take an Earthen Pot glaz'd, and set it on the Fire, putting into it some *Bear's Fat,* and suffering it to melt by degrees; then throw in the same Pouders, mixing them with the Juices, always adding some of the foresaid Fat, till a very thin Ointment be made; *with which anoint the Temples, Forehead, and top of the Head towards the Nape.* And this do three or four times a year, and continue anointing more or less as there is occasion.

"5. *A Lye, or wash for the Head.*

"Again, another Experiment may be tri'd for the same purpose. Take eight Glasses of common Water, leaves of Ivy and Sticas, of each a Pound and a half; put them together in the Water to boil till the Water be almost consum'd; afterwards let it be well strain'd and squeez'd, and put into it a small quantity of Turpentine wash'd with Rose-water: Then wash the Head with a good Lye, and after drying it, anoint with the aforesaid Liquor the Temples and hinder part of the Head.

"6. *A perfumed Apple for comforting the Brain and Memory.*

"Take Laudanum, Lignum Aloes, Storax, of each a Dram; Cloves, Nutmegs, sweet Basil-seed, of each half a Dram; with Rosewater, in which a small quantity of Mosch and Ambergrise has been dissolv'd, make an Apple.

"7. *To strengthen the Memory or restore it when lost.*

"To strengthen the Memory, or restore it when lost; or against giddiness: Take Rosemary, Borage, Chamomile, Violets, Roses, of each an Ounce; the Leaves of Laurel, Marjoram, Sage of each two Ounces; chop them all together, and put them in the best Wine, and after a day's time distil thro a glass Alembic, and keep the distilled Liquor; in which put of sweet-scented Turpentine a Pound, white Frankincense eight Ounces, Mastic, Myrrh, Bdellium, Anacardi, or Cassia nuts, of each four Ounces: beat them altogether, and so let them stand for five days, mix'd with the Distillation in a cover'd Vessel. Afterwards distil with a quick Fire till you get an Oyl out of them, which keep close shut up in a glass Bottle well stopp'd with Wax and Parchment. For use, take as much of it as would ly in a large nutshell *down the Mouth,* and anoint also the *Memorial parts,* viz. the hinder part of the Head, and all the Parts before-mention'd. *You will find it to be very good.*

" 8. *Pills for the use of Memory.*

"Take Chubeds, Calamint, Nutmegs, Cloves, of each a Dram and a half; the best Frankincense, choice Myrrh, oriental Ambergrise, of each a Scruple and a half; Mosch, five Grains: with Morjoram-water make Pills. *Take one in going to Bed, and two at Sun rising,* five hours before Meat; in the Winter every Month, in the Spring and Fall more seldom."

The chapter which treats ' of Artificial or

Fantastical Memory or Remembrance is almost a literal translation from Grataroli.

Marius D'Assigny was the Author of *Rhetorica Anglorum, vel Exercitationes Oratoriæ in Rhetoricam Sacram et Communem. Quibus adjiciuntur quædum Regulæ ad imbecilles Memorias corroborandas,* 12°. Lond. 1699. In this work, a chapter is devoted to the subject of memory, in which, as might be expected, a great part of his *Art of Memory* is ' done into Latin.'

63. *Ars Memoriæ, sive clara et perspicua Methodus excerpendi Nucleum rerum ex omnium Scientiarum monumentis a R. P. Thoma Erhardt,* 8°. *August. Vindel.* 1715. *Part* iv. *in* 3 *Tom.*

64. *Pratique de la Memoire Artificielle pour apprendre et pour retenir l'Histoire Sainte, l'Histoire Ecclesiastique et l'Histoire de France Par le Pere Buffier,* 8°. *Paris,* 3 *tom.* 1719-1723.

This work is intended to facilitate the acquisition of Chronology and universal History, and the system is at once ingenious and simple. It is composed in the form of a dialogue, and the author has compressed, into verse, the principal events and names of the different Sovereigns. The following are specimens of his verses.

The first age commencing from the Deluge.

Le petit fils de Cam et qui fut fils de chus
Est prince à Babilone et Nembrod dit Belus,
Quand se forme sous lui l'état de l'Assirie,
Vienent ceux des Chinois d'Egipte et de Scithie.
Ninive avant deux mille est en Assur fondeé,
Et pour roi Sicion choisit Egialeé.

First part of the history of France.

Ses Loix en quatre cens Pharamond introduit
Glodion Chévelu qu' Aëtius vainquit,
Merovée avec lui combatit Attila.
Childéric fuit chassé, puis on le rapela.
Clovis vain à Soissens, fait vœu d'etre Chrétien:
Defait Gombaut et tue Alaric Arien.

Vol. I. contains Sacred History and Chronology, Profane History and the History of France. Vol. II. A system of Universal Geography, for which verses are employed, as in the first volume. Vol. III. includes Chronology and History, from the birth of CHRIST to the time of Buffier's publication; Ecclesiastical history, and the history of the principal States of Europe.

CLAUDE DE BUFFIER was born of French parents, in Poland, in the year 1661; he became a Jesuit in 1679. After having travelled to Rome, he fixed his residence in the capital of France, and died in the year 1737, at Paris, in the College of the Society, aged 76 years. He has left behind him many works, besides that already noticed, the principal of which have been collected and published in his *Cours des Sciences par des principes nouveaux et simple, pour former le language, l'esprit, et le cœur, fol.* 1732. The style of Buffier, in his verse and prose writings, is more plain than elegant. He was a virtuous man, and very laborious in his studies.*

65. *Memoria Technica: or, a New Method of Artificial Memory, applied to and exemplified in Chronology, History, Geography, Astronomy; also Jewish, Grecian and Roman Coins, Weights and Measures, etc. By Richard Grey, D.D.* 8°. *Lond.* 1730.

The *ninth edition* of this book has been just published, to which, and to the eighth edition are appended *Lowe's Mnemonics,* [see No. 66.] In 1802, a thin pamphlet was published, entitled, *Technica Memoria,* by M. W. Johnes; it consists merely of extracts from Grey. In the *Monthly Magazine* for June 1805, Dr. Lettice inserted some proposals for publishing his, '*New Memoria Technica*,' but we cannot learn that this work was ever put to press. It was intended to embrace a number of tables, in chronology, geography, &c. on the plan of Dr. Grey, but with considerable improvements.*

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* Dict. Hist. Art. *Buffier.*

In order to enable those who feel so inclined to practise Dr. Grey's System, we shall extract from the *fourth edition* of the Memoria Technica *published in his life time*, so much as is necessary for the purpose.

" The principal Part of this Method is briefly this; To remember any thing in History, Chronology, Geography, *&c.* a Word is form'd, the Beginning whereof being the first Syllable or Syllables of the Thing sought, does, by frequent Repetition, of course draw after it the latter Part, which is so contriv'd as to give the Answer. Thus, in History, the Deluge happened in the Year before *Christ* two Thousand three Hundred forty eight; this is signified by the Word

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* To this list may be added a work entitled *Reminiscentia;* or, the Memory's Assistant, by *Samuel Needham,* to be completed in three parts, on the plan of Dr. Grey. The first part only has yet appeared.

Del*etok*: Del standing for DELUGE, and *etok* for 2348. In Astronomy, the Diameter of the Sun (SoLis Diameter) is eight Hundred twenty two Thousand one Hundred and forty eight *English* Miles; this is signified by Soldi-*ked-áfei*, Soldi standing for the Diameter of the Sun, *ked-afei*, for 822,148; and so of the rest, as will be shewn more fully in the proper Place. How these Words come to signifie these Things, or contribute to the Remembring of them is now to be shewn.

“ The first Thing to be done is to learn exactly the following Series of Vowels and Consonants, which are to represent the numerical Figures, so as to be able, at Pleasure, to form a *Technical* Word, which shall stand for any Number, or to resolve a Word already form'd into the Numbers which it stands for.

a	*e*	*i*	*o*	*u*	*au*	*oi*	*ei*	*ou*	*y*
1	2	3	4	5	6	7	8	9	0
b	*d*	*t*	*f*	*l*	*s*	*p*	*k*	*n*	*z*

“ Here *a* and *b* stand for 1, *e* and *d* for 2, *i* and *t* for 3, and so on.

“ These Letters are assign'd Arbitrarily to the respective Figures, and may very easily be remember'd. The first five Vowels in order naturally represent 1, 2, 3, 4, 5. The Diphthong *au*, being composed of *a* 1 and *u* 5 stands for 6;

oi for 7, being composed of *o* 4 and *i* 3; *ou* for 9, being composed of *o* 4 and *u* 5. The Diphthong *ei* will easily be remember'd for *eight*, being the Initials of the Word. In like Manner for the *Consonants*, where the Initials could conveniently be retain'd, they are made use of to signifie the Number, as *t* for three, *f* for four, *s* for six, and *n* for nine. The rest were assign'd without any particular Reason, unless that possibly *p* may be more easily remembred for 7 or Se*p*tem, *k* for 8 or ὀΚτὼ, *d* for 2 or *d*uo, *b* for 1, as being the first Consonant, and *l* for 5, being the Roman Letter for 50, than any others that could have been put in their Places.

" The Reasons here given, as trifling as they are, may contribute to make the Series more readily remembred; and if there was no Reason at all assign'd, I believe it will be granted that the Representation of nine or ten numerical Figures by so many Letters of the Alphabet, can be no great Burthen to the Memory.

" The Series therefore being perfectly learn'd, let the Reader proceed to exercise himself in the Formation and Resolution of Words in this Manner.

10	325	381	1921	1491	1012	536	7967
az	*tel*	*teib*	*aneb*	*afna*	*bybe*	*uts*	*pousoi*
	431	553	680	&c.			
	fib	*lut*	*seiz*	&c.			

" And as in Numeration of larger Sums, 'tis usual to point the Figures at their proper Periods of Thousands, Millions, Billions, &c. for the more easy Reading of them, as 172,102,795 one Hundred seventy two Millions, one Hundred two Thousand, seven Hundred ninety five; so, in forming a Word for a Number consisting of many Figures, the Syllables may be so conveniently divided, as exactly to answer the End of Pointing. Thus in the Instance before us, which is the Diameter of the Orbit of the Earth in *English* Miles: The *Technical* Word is Dorbtér*boid áze-poul;* the Beginning of the Word Dorbter, standing for the Diameter of the Orbit of the Earth, (D-iameter ORBitæ TERræ) and the remaining Part of it *boid-aze-poul* for the Number 172,102,795.

" *N. B.* Always remember that the Diphthongs are to be consider'd but as *one Letter,* or rather, as representing only *one Figure.* Note also, that *y* is to be pronounced as *w,* for the more easily distinguishing it from *i,* as *syd*=602, pronounce *swid, typ*=307 pronounce *twip.*

" The Reader will observe that the same Date or Number may be signified by different Words, according as Vowels or Consonants are made Choice of, to represent the Figures, or to begin the Words with, as

325 *tel,* or *idu,* 154 *buf,* or *blo,* or *alf,* or alo. 93,451 *ni-ola,* or *out-fub,* or *ni-fla,* or out-olb, &c.

"This Variety gives great Room for Choice, in the Formation of Words, of such Terminations as by their *Uncommonness* are most likely to be remembred, or by any *accidental Relation* or *Allusion* they may have to the Thing sought. Thus the Year of the World in which *Æneas* is supposed to have settled in *Italy* is 2824; but as this may be expressed either by *ekef* or *deido*, I chuse rather to join *deido* to *Æneas*, and make the Technical Word Æne*deido* than Æne*kef*, for a Reason which I think is obvious. Thus King *John* began his Reign *A. D.* 199. (one Thousand being understood to be added, as I shall shew hereafter;) but as this may be express'd by *anou*, or *boun*, or *ann*, I make Choice of the last, for then 'tis but calling him J*ann* instead of John, and you have the Time almost in his Name. Thus *Inachus* King of *Argos* began his Reign in the Year before *Christ* 1856; with a very small Variation in the Spelling, 'tis his Name In*akus*. But this by the Way.

"To go on with our Art; 'tis further to be observ'd, that *z* and *y* being made Use of to represent the Cypher, where many Cyphers meet together, as in 1000, 1000000, &c. instead of a Repetition of *azyzyzy*, which could neither be easily pronounced nor remember'd, *g* stands for *Hundred*, *th* for Thousand, and *m* for Million.

Thus *ag* will be 100, *ig* 300, *oug* 900, &c. *ath* 1000, *oth* 4000, *otho* or *othf* 4004, *peg* 7200, *dig* 2300, *lath* 51000, *am* 1000000, *azmoth* 10.004,000, *sumus* 65.000,056, *loum* 59,000,000, &c. The solid Content of the Earth (TERræ MAGNITudo) is two Hundred sixty four Thousand, eight Hundred fifty six Millions of Cubick Miles; this is express'd by the Word Ter-magnit-*éso-klaum*; Termagnit standing for Terræ Magnitudo; *éso-klaum* for 264,856,000,000 the Number of Cubick Miles.

" It will be sometimes also of Use to be able to set down a Fraction, which may be done in the following Manner: Let *r* be the Separatrix between the Numerator and the Denominator, the first coming *before*, the other *after* it; as *iro* $\frac{3}{4}$ *urp* $\frac{5}{7}$ *pourag* $\frac{79}{100}$ or ,79 *north* $\frac{94}{1000}$ or ,094 &c. Where the numerator is 1, or Unit, it need not be expressed, but begin the Fraction with *r*, as $\frac{1}{2}$ *re*, $\frac{1}{3}$ *ri*, $\frac{1}{4}$ *ro*, &c. So in Decimals, ,01 or $\frac{1}{100}$, *rag*, ,001 or $\frac{1}{1000}$ *rath*.

1. *Chronology and History.*

" THE Ages of the World before our Saviour's Time are by Chronologers generally divided into Six: The First from the Creation to the Deluge; the Second from the Deluge to the Call of *Abraham*, &c. according to the following Periods:

	Before Christ.
1. The CReation of the World	4004
2. The universal DELuge	2348
3. The Call of ABraham	1921
4. EXodus, or the Departure of the *Israelites* from *Egypt*	1491
5. The Foundation of *Solomon*'s TEMple	1012
6. CYRus, or the End of the Captivity	536
The Birth of *Christ*.	

" All this is express'd in one Line, as follows:

Cr*othf* Del*etok* Ab*aneb* Ex*afna* Tem*bybe* Cyr*uts*.

Cr denotes the Creation, *othf* 4004, Del the Deluge, Ab the Calling of Abraham, Ex Exodus, Tem the Temple, and Cyr Cyrus. The Technical Endings of each represent the respective Year according to the Rules already laid down.

" I shall explain two Lines more.

Nicsilcon ári*tel*, Codathé ma*teib*, Ephcethe-nês*fib*.
Chállemar-eudi*ola*, Covijúst-O*lut*, C-ágcopo-mon*seiz*.

" These two Lines are a short History of the first Six General Councils; and every Syllable has its distinct Signification. The *first* represents the Place where it was held; the *second* shews who was Pope at that Time; the *third* under what Emperor; the *fourth* against what Heretick; the *fifth*, in what Year of our Lord. Thus the first Word is Nicsilcon ári*tel*. Nic denotes the Council of NIce, sil Pope SILvester, con the Emperor CONstantine, ari the Heretick ARius, *tel* the Year 325. The second Word is Codathé ma*teib*; Co denotes the Council of COnstantinople, da Pope DAmasus, *the* the Emperor THEodosius, ma the MAcedonians, *teib* 381. The third is Ephcethe-nés*fib*; Eph the Council of EPHesus, ce Pope CElestine, *the* the Emperor *THEodosius, nes the NEstorians, *fib* the Year 431. The fourth is Chállemar-eudío*la*; Chal the Council of CHALcedon, le Pope LEo, mar the Emperor MARcian, eudi the Errors of EUtyches and DIoscorus, *ola* the Year 451. The fifth is Covijúst-O*lut*; Co stands for COnstantinople, vi Pope VIgilius, just the Emperor JUSTinian, O the Errors of Origen, *lut* the Year 553. The sixth C-ágcopo-mon*seiz*; C stands again for Constantinople, ag for Pope AGatho, copo the Emperor COnstantine POgonatus, mon the MONothelites, *seiz* the Year 680.

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* *Theodosius Junior.*

"*The Regal Table of England since the Conquest, and some of the most remarkable Princes before it.*

		Bef. Christ.
CASIBELanus chosen chief Commander by the *Britains* against the Invasion of *Julius Cæsar* [Casibel*ud*]		52
		Aft. Christ.
Queen BOADicea, the *British* Heroine, being abused by the *Romans*, raises an Army and kills 7000 [Bóad*aup*]		67
VORTIGern who invited the *Saxons* to the Assitance of the *Britains* against the *Scots* and *Picts* [Vortig*fos*]		446
HENGist the *Saxon*, who erected the Kingdom of *Kent*, the first of the Heptarchy [Heng*ful*]		455
King ARTHur famous for his powerful Resistance and Victories over the *Saxons* [Arth*laf*]		514
EGBErt who reduced the Heptarchy, and was first crown'd sole Monarch of *England* [Egbe*kek*]		828
ALFREd, who founded the University of *Oxford* [Alfré*kpe*]		872
CANute the *Dane* [Can*bau*]		1016
Edward the CONFESsor [Confés*fe*]		1042
WILliam the CONq. [Wil-con*sau*]	*Oct.* 14.	1066
William RUFUS [Ruf *kois*]	*Sept.* 9.	1087
HENRy I. [Henr*ag*]	*Aug.* 2.	1100
STEPHen [Steph*bil*]	*Dec.* 2.	1135
*HEN*ry the SECond [Hensécbuf]	Oct. 25.	1154

		Aft. Christ.
RIchard I. [Ric*bein*]	*July* 6.	1189
John [J*ann*]	*April* 6.	1199
HEnry the THird [Heth*das*]	*Oct.* 19.	1216
EDward I. [Ed*doid*]	*Nov.* 16.	1272
EDvardus SEcundus [Edse*typ*]	*July* 7.	1307
EDvardus TERtius [Edter*tes*]	*Jan.* 25.	1326
RIchardus SEcundus [Rise*tóip*]	*June* 21.	1377
HEnry the FOurth [Hefo*toun*]	*Sept.* 20.	1399
HEnry the FIfth [Hefi*fád*]	*March* 20.	1412
HEnry the SIxth [Hénsi*fed*]	*Aug.* 31.	1422
EDvardus QUARtus [Edquar*faux*]	*March* 4.	1460
Edward the FIfth Richard III. [Esi.R*okt*]	*April* 9. *June* 22.	1483 1483
HENricus SEPtimus [Hensép*feil*]	*Aug.* 22.	1485
HENricus OCtav. [Hyno*clyn*]	*April* 22.	1509
EDvardus SEXtus [Edsex*los*]	*Jan.* 28.	1546
MARY [Mary*lut*]	*July* 6.	1553
ELisabeth [Els*luk*]	*Nov.* 17.	1558
JAMes I. [Jams*yd*]	*March* 24.	1602
CARolus PRIMus [Caroprim*sel*]	*March* 27.	1625
CARolus SECundus [Carsec*sok*]	*Jan.* 30.	1648
JAMes II. [Jam*seif*]	*Feb.* 6.	1684
WILliam and Mary [Wil*seik*]	*Feb.* 13.	1688
ANne [An*pyb*]	*March* 8.	1701
GEOrge I. [Gëo*bo*]	*Aug.* 1.	1714
GEOrge [illegible] [Gëosec*doi*]	*June* 11.	1727

« *The Memorial Lines.*

Casibel*ud* Bóad*aup* Vortig*fos* Heng*ful* & Arth*laf*.
Egbe*kek* Alfré*kpe* Can*bau* Confés*fe*.

Wil-cou*sau* Ruf*koi* Henr*ag*.———
Steph*bil* & Hensèc*buf* Ric*bein* J*ann* Heth*das* & Ed*doid*.
Edse*typ* Edter*tes* Rise*toíp* Hefo*toun* Hefi*fád*que.
Hénsi*fed* Edquar*faux* Efi-R*okt* Hensép*feil* Henoc*lyn*.
Edsex*los* Mary*lut* Els*luk* Jam*syd* Caroprim*sel*.
Carsec*fok* Jam*seif* Wil*seik* An*pyb* Gëo*bo*——*doi*.

" *N. B.* After *Canute* inclusive, One Thousand is to be added to each: It was thought unnecessary to express it, it being a Thing in which it is impossible that any one should mistake.

" If it be desired to remember in what Month, and Day of the Month each King began his Reign, it may be done by the following Lines:

Wil-*tbô-sou-fat* Steph-d*e* Jam-ch*ef-fau* Ri-l*s*-j*eb-ed* El-n*ap*.
Hen-g*é*-t*el-an* s*ez*-ch*ez* *gib*-ge*d*-pe*d* Geor-g*a*-ja*h* An ch*ei*.
Car-ch*ep*-ri*x* Ma-l*s* Jo-p*s* Ed-n*ás*-l*oi* r*el*-ch*o*-p*ou* r*ek*-que.

" EXPLANATION.

" The *Italick* Letters represent the Day of the Month; the Letter immediately preceding represents the Month itself, r standing for January, f for *F*ebruary, ch for Mar*ch*, p for A*p*ril, m for *M*ay, j for *J*une, l for Ju*l*y, g for August, s for *S*eptember, *t* for Oc*t*ober, n for *N*ovember, and d for *D*ecember.

"Thus Steph-d*e*, Steph King Stephen, d*e* Dec. 2. El-n*ap* El Elizabeth, n*ap* Nov. 17. In Words of three or more Syllables, the first Syllable stands for all the Kings of the same Name, and the following Syllables in Order answer to the first, second, third, &c. of that Name. So Jam-ch*ef*-*fau*; Jam denotes James I & II. ch*ef* (viz. March 24.) belongs to James I. and *fau* (viz. Feb. 6.) to James II. So Ri-l*s*-j*eb*-*ed*; Ri denotes all the Richards, l*s* (viz. June 6.) belongs to Richard I. j*eb* (viz June 21.) to Richard II. and *ed* (viz. 22. of the same Month) to Richard III.

"If this be thought either too difficult, or too minute, the Reader may pass it over."

In the Rev. J. Robinson's 'Grammar of History,' will be found a list of remarkable events from the *Creation* to the *Battle of Trafalgar,* with all the technical terminations of Dr. Grey. This is a useful supplement.

"2. *Geography.*

"In the first place are laid down the general Divisions of *Europe, Asia, Africk,* and *America;* then the particular Divisions of the several Kingdoms of *Europe,* into their respective Governments or Provinces. For every Division there is one *Technical* Line, composed of the first syllables (or sometimes only of the first letters) of the Parts or places into which it is subdivided; which Syllables or Letters are distinguished from the rest, in the Tables, by Small Capitals, or an *Hyphen* following.

" 'Tis further to be observ'd, that the Beginning, Middle, and Ending of the Line answer, in order, to the *Northern*, *Middle*, and *Southern* Divisions of the Kingdoms or Countries; so that not only the Places themselves, but in some Measure their Situation with Respect to each other may be remember'd at the same Time. Thus in the *Memorial Line* for *France*,

Fra= P Nor-I-cham ; Bret-O-BuL ; Gui-La-DaP.

" P Nor-I-cham denotes the four *Northern* Governments, *viz.* P-icardy, NORmandy, I-sle of *France*, and CHAMpagne.

" Bret-O-BuL denotes the four *Middle* Governments, *viz.* BRETagne, O-rleanois, BOURgogne, and L-ionnois.

" Gui-La-Da-P denotes the four *Southern* Governments, *viz.* GUIenne with Gascony, LANguedock, DAuphiny and P-rovence.

" It will be yet some further help to remember the Situation of Places, to observe, that in the several Divisions I begin at the *West*, and go on *Eastward*, as far as the Limits of the Country will allow, in a strait Line, unless where the Irregularity of the Position makes this Method inconvenient or impracticable: Where that is the Case, the Reader will supply the Defect by his own Observation, and by comparing with proper Maps.

" Observe further, that where the Syllables are connected with an *Hyphen*, the countries denoted by them are contiguous from West to East; thus,

" Nor-I-cham shews that the *Isle* of *France* joyns to *Normandy* on the East, and *Champagne* to the *Isle* of *France* on the *East*. Where the Syllables or Letters denoting two or more Countries are joyn'd together without an *Hyphen*, there the Countries are contiguous from North to South. Thus Gui-La-DaP shews that *Languedock* joyns to *Guienne* on the East, *Dauphiny* and *Provence* to *Languedock* on the East; and also that *Provence* is contiguous to, and South of *Dauphiny*. Such Syllables as have an *Hyphen* preceding, but are not by it immediately joyn'd to the foregoing Syllable, signifying that the Countries denoted by them lie Eastward, but are not contiguous. Thus Sp-It-Turk shews that *Italy* is East of *Spain*, and *Turky* East of *Italy*, but not contiguous.

" When the reader is become well acquainted with the *General Divisions*, he may then go on to charge his Memory with his chief Cities, and most remarkable Places of every Country; their Longitude and Latitude; the Correspondence of ancient and present Geography; the Geography of the Old and New Testament; the Proportions of the Kingdoms of *Europe* to *Great Britain;* the Situations of the most noted Islands; with other instructive and entertaining Particulars in Geography: All which he will find himself able to remember with greater Ease than he can possibly imagine, till he is acquainted with the *Memorial Lines*, contriv'd for that Purpose.

" *The General Divisions of Europe, Asia, Africk and America.*

" I. EUROPE is divided into,

1. *Northern;* Containing NOrway, S-weden, MOscovy; D-enmark:

2. *Middle;* Containing NEtherlands, GErmany, POland, Little T-artary; FRANce, SWITzerland, HUNgary, TRANsilvania, MOldavia, VAlachia.

3. *Southern;* Containing SPain with *Portugal*, ITaly, TURKy.

Eur=No-S-Mo D; Né-Ge-Po-IT Fran-Swits Hun-Tran Mo-Va Sp-It-Turk.

" II. ASIA is divided into,

1. *Northern;* Containing Great TArtary, GEOrgia.

2. *Middle;* Containing TURky in *Asia;* PERsia, Empire of the MOgul, CHINa.

3. *Southern;* Containing ARABia, East INDies

As = Ta-Geo; Tur-Pé-Mo-Chin; Arab-Ind——

" III. AFRICK is divided into,

1. *Northern;* Containing BArbary, BILdulgerid, E-gypt.

2. *Middle;* Containing ZAara, NEgroland, GUInea, N-ubia.

3. *Southern;* Containing CoNgo, ABISSinia, Coast of ABEX, Coast of CAFreria, MONOmotopa, ZANGUebar, Coast of AJan.

AF=BáBil-E; ZáNeGui-N; Con-Abiss-Abe Caf-Mone-Zangu-Aj.

" IV. AMERICA is divided into,

1. *N-orthern;* Containing New WALes, New BRITain, LOVISiana, CANada or New France, New GRANada, MExico, FLORida, New England containing these seven Provinces, (CARolina, VIrginia, MAryland, P-ensilvania, New YORk, New J-arsey, New ENGland properly so call'd,) lying from South-West to North-East.

2. *S-outhern ;* Containing Terra FIRMa, PERu, Country of the AMAzons, BRAsil, CAili, PARAguay, MAGellanica.

N-AM=Wal-Brit Lóvi-Can GranMex-Flor (Cár-Vi-Ma P-YorJ Eng.
——S-AM=Firm Per-Amáz-Bra Chi-ParMag.

3. " *Astronomy.*

" The *Technical* Endings affixed to the Beginnings of the Names of the Planets represent the Number of Miles of their Diameters, Distances, Magnitudes, &c. according to the general Key. Where the Beginning of the Word is *Technical,* it is composed of the Syllables or Letters distinguish'd in the Tables by Small Capitals.

" *The D-iameters, &c. of the Planets in English Miles, according to Dr. Derham's Astrotheology.*

	Engl. Miles.
LUna [LuD*dapu*]	2175
MERCUry [MercúD*epok*]	2748
MARs [MarD*okpu*]	4875
VEnus [VeD*oneip*]	4987
TERRæ DIAm. [TerDia*pousoi,k*]	7967,8
SAturn [SaD*ní-ola*]	93,451
JUpiter [JuD*at-sli*]	130,653
SOLis DIam. [SolDiked-úfei]	822,148

“ *The Diameters of their* ORBITS.

	Engl. Miles.
SATurn [D-orb-Sát*asob-les-teis*]	1641.526,386
JUpiter [JuRB*koúl-atoth*]	895.134,000
MArs [MaRB*ese-deid-naz*]	262.282,910
TERra [D-orb-Ter*boid-áze-poul*]	172.102,795
MErcury [MeRB*sau-sebth*]	66.621,000
VEnus [VeRB*bef-okoí-baf*]	124.487,114
LUNa [Dorb-luno*póu-nyl*]	479,906
SATurni ANnUli DIam. or the Diameter of *Saturn's* Ring [Sāt-anudi*dáz-daul*]	210,265
——Ejusdem LATItudo, or the Breadth of *Saturn's* [——latid*óu-eg*]	29,200
TERræ SUPERficies, or the superficial Content of the Earth [Ter-super*aun-fof-ezau*]	199.444,206
——Ejusdem DIAmeter [Dia *pou-sai,k*]	7967,8
——Ejusdem Orbitæ PERIMeter [Perm*ufy-skau-del*]	540.686,225

“ *The Magnitudes or Solid Contents in Cubick Miles of the larger Planets.*

“ MAGNITudo.

	Cubic Miles.
TERræ [Ter-magnit*éso-klaum*]	264,856.000,000
SOLIS[Mag-sólis*ëoúz-noia*-mil-mil]	290,971.000,000,000,000

	Cubick Miles.
Jovis [Mag-jov*nez-záb ezym*]	920.011,200.000,000
SATurni [Sal-manit-*oép-dak & izym*]	427.218,300.000,000

" *The* AMbit *or Circumference.*

	English Miles.
JOVIS [Am-jovis*ipoú-zot*]	379,043
T-erræ [Am-T*el-yib*]	25,031
SOLIS [Am-sol*e-leid-koit*]	2.582,873

" *The Memorial Lines.*

LnD*dapu* MercúD*epok* MarD*okpu* TerDia*pousoi,k*.
JuD*aty-sli* VeD*oneip* SaD*ni-ola*, SolDi*ked-áfei*.
D-orb-Sát*asob-les-teis* JuRB*koúl-atoth* MaRB*ese-deid-nas*.
D-orb-Ter*boid-úze-poul* MeRB*sau-sebth* VeRB*bef-okoi-buf*.
Sat-ann-di*dáz-daul*—lati*dóu-eg* D-orb-lun*póu-nyl*.
Ter-super*ann-fof-ezau*—dia*pousoi,k*—Perm*ufy-skaudel*.
Ter-magni*téso-klaum* Mag-sólis-*ëoúz-noia*-mil-mil.
Mag-Jov*nez-záb-ezym* Sat-magnit*oep-dak & izym*.
Am-jovis*ipoú-zot* Am-T*el-yib* Am-sol*e-leid-koit*.

4. *Coins, Weights, and Measures.*

" The Beginning of the Words is composed of the Initial Letters; thus At-ta stands for ATtick TAlent, HET for Hebrew T-alent; AD for A-ttick D-rachm; AlD for ALexandrian D-rachm; HETO for Hebrew Talent of Gold; (HET standing for HE-brew T-alent as before, *and* O for *Or*, or Gold) RoL for ROman

L-ibra, Den for DENarius, Shek for SHEKel, GreF for GREcian F-oot, HeC for HEbrew C-ubit, RoF*q* for ROman F-oot S*q*uare, *&c.*

"The *Italick* Endings of the Words represent the Number of Pounds, Shillings and Pence, which are separted from each other by *Hyphens*, or else signified by the *Roman* Letters l. s. d. The double Lines denote Equality. Thus AM=dr*ag*=*t-ei-n*, signifies that an A-ttick M-ina, which is equal to 100 Drachms, was 3 Pounds 8 Shillings and 9 Pence. The Letters, though separated, are to be pronounced together; as *t-ei-n tein.* The Reader is to be reminded here that *re* signifies ½, *ro* ¼, &c. But *Note*, that instead of the Fraction *re*, the Letter *h* is sometimes used for HALF, as *oikbe-h*=7812½ *ss.* 7812 Pounds 10 Shillings."

This system of Dr. Grey reflects great credit on the ingenuity of the author. Of the *Memoria Technica.* Dr. Priestley observes, "it is so easily learned, and may be of so much use in recollecting dates, when other methods are not at hand, that he thinks all persons of a liberal education inexcusable, who will not take the small degree of pains that is necessary to make themselves masters of it; or who think any thing mean, or unworthy of their notice, which is so useful and convenient."*

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* Lectures on History, p. 157.

Richard Grey was born in the year 1693, and was a learned divine of the Church of England. He took his degree of M. A. at Lincoln College, Oxford, in the year 1718-19. The first preferment which he obtained, was the Rectory of Kilncote, in Leicestershire, to which he appears to have been instituted at an early period of life; and afterwards he was appointed to the Rectory of Hinton, in Northamptonshire, and to a Prebend in the Cathedral Church of St. Paul.

In the year 1730, he published his *Memoria Technica*. In the same year also he published, "A System of English Ecclesiastical Law, extracted from the *Codex Juris Ecclesiastici Anglicani*, of the Right Rev. the Lord Bishop of London, for the use of young students in the Universities, who are designed for Holy Orders." 8°. For this work the University presented him with the degree of Doctor of Divinity, by diploma, during the following year. It was afterwards reprinted, at different periods, with the addition of marginal references to the pages in the *Codex*.

In the year 1736, he published a large anonymous pamphlet, entitled, "The miserable and distracted state of Religion in England, upon the downfall of the Church established:" [illegible] the year 1738, "A new and easy method of learning Hebrew without Points. To which is annexed, by way of praxis, the Book of Proverbs, divided according to the Metre; with the massoretical Readings in Roman Letters, &c. a grammatical analysis, and short notes, critical and explanatory, etc. 8°." In the following year, he published, on a large single sheet, "Tabula exhibens paradigmata Verborum Hebraicorum regularium et irregularium, per omnes Conjugationes, Modos, Tempora, et Personas, plenius et accuratius excusa;" and also, "Historia Josephi Patriarchæ, Literis tam Romanis, quam Hebraicis excusa, cum Versione Interlineari S. Pagnini, & vocum Indico Analytico; præmittitur nova Methodus Hebraicè Discendi, diligentius recognita, etc. 8°." These pieces were again reprinted in 1751.

In the year 1742, Dr. Grey published, "Liber Jobi in versiculos Metrice divisus, cum Versione Latina Alberti Schultens, notisque ex ejus Commentariis excerptis, etc. Edidit, atque annotationes suas ad Metrum præcipue spectantes, adjecit R. G. etc. Accedit Canticum Moysis Deut. xxxii. cum Notis variorum, 8°." In the preface to this work some strictures were introduced on particular passages in Warburton's "Divine Legation;" to which that gentleman replied in his "Remarks on several occasional reflections," etc. This reply called forth from

Dr. Grey, in the year 1744, an "Answer to Mr. Warburton's 'Remarks on several occasional Reflections,' so far as they concern the preface to a late edition of the Book of Job; in which the subject and design of that divine poem, are set in a full and clear light, and some particular passages in it occasionally explained," etc. 8°.

In the year 1746, Dr. Grey occupied the post of official and commissary of the Archdeaconry of Leicester. In 1749, he published, "The last words of David, divided according to the metre, with notes critical and explanatory," 4°. This last publication, except new editions of his former pieces, was an English translation of Mr. Hawkins Browne's poem, "De Animæ Immortalitate," which appeared in 1753. Besides the articles enumerated above, Dr. Grey printed some single "Sermons," preached on public occasions. He died in 1771, in the seventy-eighth year of his age.*

66. *Mnemonics delineated in a small compass and easy Method, for the better enabling to remember what is most frequently wanted, and most difficultly retained or recollected*, 8°. *Lond.* 1737.

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* Nichols' Anecdotes of Bowyer.

This extremely rare tract, compiled by *Solomon Lowe*, contains 14 pages in a very small type, besides the title and the advertisement which is printed on the back of the title, making a single sheet of demy, 8°. As Dr. WATTS has considered this tract as a material improvement of Grey, and as some of the purchasers of the present volume may choose to practise the scheme of Grey and Lowe, we have thought proper in this edition, to reprint the whole of the original tract as it has become extremely rare;—and although lately reprinted, it cannot be purchased without the incumbrance of the *Memoria Technica* of Grey; a sufficient specimen of which has already been given.

ADVERTISEMENT.

"THE key to this art (so far as relates to the expressing of numbers by Letters) we owe to the ingenious Dr. Grey. What follows may be considered as a supplement to and improvement of his *Memoria Technica*: for most of the articles are what, perhaps, did not occur to him: and the rest I think are reformd* to great purpose; particularly those of Weights, Coins, and Measures; of which I have given a full account in less than three pages, whereas the Doctor's (though very defective) amounts to 31. Those who are curious will add such particulars, as they have most occasion for; in order to lay up a treasure of useful principles in their heads; for the greatest part of which they must, otherwise, from time to time, have recourse to books; or, where those are not at hand be disappointed; how much soever it may be to their discredit or prejudice. I need not inform those who have the education of youth, whether in schools, or universities, how much something of this nature would expedite the progress of their pupils, and show them to advantage; furnish betimes with a satisfactory certainty, readiness, and exactness, in things, of which Masters themselves, and men of reading, have generally but an imperfect and confused remembrance. I shall only add (to obviate an objection, that may naturally offer itself to such as are unacquainted with things of this nature) that how difficult and forbidding soever the jargon of this art may appear; nothing will stick more effectually in the memory, when once familiarised by frequent repetition so as to flow into the mind without reflection.——*N. B.* The accents denote the first syllable of a dactyl.

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* We have preserved Mr. Lowe's orthography throughout.

"SOLOMON LOWE."

The Key.

Directions for the better learning to remember figures or numbers exprest by Letters.

a	e	i	o	u	au	oi	ei	ou	y
1	2	3	4	5	6	7	8	9	0
b	d	t	f	l	s	p	k	n	z

g 100. th 1,000. m 1.000,000.

r denotes fractions, as follows: ,ro $\frac{1}{4}$: ,iro $\frac{3}{4}$: d,eri $2\frac{2}{3}$: ,rag ,01.

Arithmetic[1].

Arithmetical Characters.

+ and: — less: × multiplied-*into*: ÷ divided-*by*: = is, gives.

The Division of the old Roman AS, *viz. any Integer, or Whole.*

Unica, Sext. Quă Trĭens. Quinc. Sem. Sept. Bes. Dŏdră Dext. Deu.

AS, parts	12	Semissis	6
Deunx	11	Quincunx	5
Dextans	10	Triens	4
Dodrans	9	Quadrans	3
Bessis	8	Sextans	2
Septunx	7	UNCIA	1

COINS.

Coins reducd to Farthings.

1 E.] ³ Sh-*ok*. Cr-*ĕfy*.] N-*idz*. Ange-*okz*. M-*ăufy*. Gui-*bzyk*. Car-*bŭzo*, Jac-*beg*.

2 H. Ger-*f*] Bĕ-*lĭ*. Sh-*abz*. *Man-*sups*. †Tal-*ĭdeith feil*] Sh-*aplĕ*. Tal *um dusth*.

3 G. Lep-,*tărĭtau*. Dĭchăl-a,*prĕf*. ŏb-*u,rau*]*Dr-*ib*. ⸸ Stătĕr-*ado*.

4 R. T,*oipŭrăth*. § As-*t,raz*] Ses-*p,irf*. V-*al,rĕ*. Dĕn-*ib*. Sp-*oĭl*.] Aŭr-*oipu*.

Proportions.

* DRACHM] Hĕb-*ĭs*. Att-*tĭ*. Alex-*oid*—MIN] Att-*tig*. Ităl-*ekeiz*.

⸸ TAL] Att-*boukth*. Băb-*ĕtath*.] Att-*ĭbauth eig*. Bab-*ĭm ăunsth*. R-*akyth*.

† STATER (gold) Att-*poil* Cyz-Phĭl-Alex-*dap*. Croes-Dărĭ-*buly*.

§ As weighd ouncĕs-*ăd*, U-C-*bouz* : *e* ; *fouz*; *a* ; *ĭip* : -*ăre* ; *leis*.

MONEY.

Sums of Money, or Money of Account.

5 (E) Penn-*f*. Gr-*as*. Pound-*ousy*. (G) TAL. MIN. Ægĭ-*g*=*ubss*. ⁵Ant-*sy*=*g*.

6 Bab-*oiz*=*tuns*. Pt-*az*=*aztĭ*. Sўr-*al*=*poil*. Tyrian-*eiz*=*fatt*.

7 (R) SESTERCE——*tŏ-ath*, duo, bini nummi ——tŏ-*am*, duo, bina,

8 —stertia ; or millia sestertiûm,——above by the adverbs, as follows :

9 Bis sestertiûm, or bis ; understanding millia centum (or centena).

6 *Abbreviatures explaind.*

Æginéa mina, talentum (lin.) 5. Alexandrina drachma, * ; stater, ⸸. Angel, 1. *Antiochica* min.

tal. 5. As, 4. §. Attica drachma, *, mina, *, stater, †; talentum, †. Aureus denarius, 4. *Babylonica* min. tal. †. Bekah, 2. Carolus, 1. Crœsius stater, †. Crown, 1. Cyzicénus stater, †. Dareius stater, †. Denarius, 4. Dichalcos, 3. Drachma 3. Gerah 2. Groat^{c}, 5. Guinea, 1. Hebraica drachma,*. Jacobus, 1. Italica mina,*. Lepton, 3. Maneh, 2. Mark, 1. *Mina*^{c}, *, 5. Noble, 1. Obolus, 3. *Penny*^{c}, 5. Philippicus stater, †. *Pound*, 5. *Ptolemaica* min. tal. 6. Románum talentum, †. *Sestertium*, 7. Sestertius, 4. Shekel, 2. Shilling, 1. Sportula, 4. Stater, 3. *Syria* min. tal. 6. *Talentum*^{c}, 2, 5. Teruncius, 4. *Tyria* min. tal. 6. Victoriátus, 4.

6 *Synonyms and Equivalents.*

Æs, as. Assarium, as. *Attica minor mina*=antiochica. *Attica major mino*=tyria. Bigátus, denarius. *Centussis*, 100 asses. Chalcos, ½ dichalchos. *Decussis*^{c}, 10 asses. Didrachmon, 2 drachmæ. Diobolon, 2 oboli. *Dupondius* , 2 asses. *Eubœa mina*=antiochia. Hemiobolon, ½ obolus. Laureat, carolus. Libella, as. *Libra* (or libra pondo) = mina attica. *Mna*, mina, *Nonussis*, 9 asses. Nummus, sestertius. Obolus, ½ noble. *Octussis*, 8 asses. Pentadrachmon, 5 drachmæ. *Pondo*, v. libra. Quadrans, ¼ as, ¼ noble. Quadrigátus, denarius. *Quadrussis*^{c}, 4 asses. Quinarius, victoriátus. *Quinquessis*^{c}, 5 asses. *Rhodia*=æginea. Sembella, semilibella. Semilibella, ½ libella. *Semunica*, ½ uncia. Sescuncia, 1 ½ uncia. *Sextans*^{c}, $\frac{1}{6}$ as. *Sextula*^{c}, $\frac{1}{6}$ uncia. Solidus, aureus. Tetradrachmon, 4 drachmæ. Tetrobolon, 4 oboli. *Tressis*, 3 asses. *Tricessis*, 30 asses. Tridrachmon, 3 drachmæ. *Triens*^{c}, $\frac{1}{5}$ as. Triobolon, 3 oboli. *Vigessis*, 20 asses. *Uncia*^{c}, $\frac{1}{12}$ as.

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1 N. B. The several *coins*, *measures*, and *weights*, being reducd to the lowest denominations, the memorial verses answer all the purposes of the largest tables: (1) The dif-

ference of any two terms being known by subtraction [a]: and (2) How many of any make one of another, by division [b].——e.g. (a) What is the difference between a *Shilling* and a *Shekel?* Answ. (Sh-*abz*) 110 — (Sh-*ok*) 48 = 62 q. i. e. S 2 : 3 : 2 — S 1 = S 1 . 3 : 2, the shekel more than the shilling. (b) How many *Spans* make a *Fathom?* Answ. Fath-*oid*) 72 ÷ (Spa-*n*) 9 = 8. Accordingly, if it be (askd, *What is a fathom?* (and so of any other) the answer may be made, the same way, in any of the prior denominations: e. g. 21 palms, or 6 feet, or 4 cubits, or 2 yards, or 1 1-5th pace, &c.

2 Any whole was called AS, and 1 twelfth of it UNCIA [whence our terms of *ounces* for weight, and *inches* for length]. The several numbers of those unciæ (between 1 and 12)——were denominated, in order, as follows in text: viz. Sextans (i. e. 1-6th) 2 Quadrans ($\frac{1}{4}$) 3, &c.---and express their manner of reckoning *Interest* of money: thus *usura asses* [centesimæ] was 1 per month [12 per year] per cent. (suppose aurei, or pounds: *deunces*, 11 twelfths per month, and so on to *unciariæ*, 1 twelfth per month [1 per year] e. g. 20d. per month, 20s. per year.

3 Of the three apartments distinguisht by brackets, in the 1st are Brass or Copper-; 2d, Silver; 3d, Gold-coins. ———NB. (1) Sh-*ok* (as appears by the Abbreviatures explaind underneath, and by the key above) signifies *Shilling* 48: i. e. a shilling is 48 farthings; and so of the rest. (2) *y* (the memorial letter) may be pronouncd *wee* or *wi*, to distinguish it from *i*: e. g. Cr-*efy*, as if it were Cr-*efwi*.

4 i. e. in the year (*Urbis Conditæ*) from the building of the city of Rome, 190.——*e*,*fouz*; i. e. U. C. 490, when the Punic war had exhausted the treasury, it weighed but 2. and so of the rest.

5 i. e. the Æginean *mina* was (ubss) 5656 q: (g) 100 of which made the Æginean *talent*, and so of the rest.

6 N. B. In these lists—those in *Italic* are moneys of account, the rest, coins.---The *Figures* and *Marks* refer to the corresponding memorial verses.

(c) N.B. There are also COIND Half-guineas, Seven-shilling pieces, Half-crowns, Three-pences, Two-pences, Halfpennies; and such as are distingusht by a superior ^{c}.

MEASURES.

Cubic Measures reducd to Pints.

1 { Quar-d. *Gal-*k*. R-*af*ŏ. Bar-*eld*. Ti (WINE)
{ *tts*. H-*uzf*. P-*aŭpĕ*. B-*athei*. T-*ethbau*.

2 Firk-b*oid*, a*sf.*[1] Kĭl-ä*bek*, b*aff* (BEER & ALE)
Bar-b*deĭk*, ă*dus*. Hŏg-*ălad*, b*ups*.

3 Pe-*bs*. Bu-*so*. Str-*aek*. Coom-*dus* (DRY) Se-*ŭbĕ*. Ch-*etzo*. We-*ithpĕ*. Lă-*lady*.

4 *(liq.)* C-,*urei*. L-*irŏ*. Căb-*i*. H-*az* (H) Seăh-*dy̆*.
Bath-*sy̆*. Hŏm-*auzu* (-*uid*.

5 Cab-,*durau*. Gŏm-*ŭraz*. Se-*boi* (DRY) Bă-*lă*.
Le-*dlaŭ*. Hŏmer-*lat*.

6 Coch-,*rădy̆*. Ch-*rauz*. Myst,*rok* (G) Conch-,*raf*.
Oxybă-,*reĭ*- Metr-*eis*.

7 Coch-,*rădy̆*. Choen-*brĕ*. Mĕdim-*pĕ* (DRY) Cy̆-
Ox-Cŏty̆-Xest as the Roman.

8 Quart-,*rŏ*. Sĕ-*a,rl*. Cŏ-*p*. Ur-*ek-ră* (R) Quă-
dr-*up*. Cŭlĕ-*bafp*. Lĭ. Cy̆. Ace. Hem.

9 Lig-,*rek*. Cy-*rad*. Acet-,*reĭ*. Hĕm (DRY) in,*rĕ*.
Sĕ-*a,rŭ*. † Mod-*us,re*.

10 * GALLŎN cŏntains inches (dry) *doid,rŏ* [2]:
(beĕr)-*ekĕ* : (wine) *eta* [3].

11 † POTTLE Quărts (dr-) *i* (liquid)-*e*—† MODI-
Pints (liquid)-*an* (dry) *bau,ro*.

Abbreviatures explaind.

Acetabulum (lin.) 9, 8. Barrel, 1. Bath, 4. Bushel, 3. Butt, 1. Cab, 4. Caph, 4. Cheme, 6. Chaudron, 3. Chœnix, 7. Cochlearion, 6. Concha, 6. Congius, 8. Coomb, 3. Culeus, 8. Cyathus, 9. Firkin, 2. Gallon, 1. Gomer, 5. Hemina, 9. Hin, 4. Homer, 4, 5. Hogshead, 1, 2. Kilderkin, 2. Last, 3. Letech, 5. Ligula, 9, 8. Log, 4. Medimnus, 7. Metrétes, 6. Modius, 9, 11. Mystron, 6. Oxybaphon, 7. Peck, 3. Pottle, 11. Puncheon, 1. Quadrantal, 8. Quart, 1. Rundlet, 1. Seah, 4, 5. Seam, 3. Sextarius, 8, 9. Strike, 3. Tierce, 1. Tun, 1. Urna, 8. Wey, 3.

Synonyms and Equivalents.

Amphora, quadrantal. Amphoreus, metrétes. Cadus, metrétes. Carnock, coomb. Chos, congius. Coron, homer. Cotyle, hemina. Ephah, bath. Lingula, ligula. Omer, homer. Oxybaphon, acetabulum. Pipe, butt. Quarter, seam. Quartarius, ¼ sextarius. Semimodius, ½ modius. Xestes, sextarius.

---

[1] i. e. A *Firkin* (1) of Beer 72 pints. (2) of Ale=64 pints. and so of the rest.

[2] By act of parliament, in 1697, the gallon contains only $268\frac{4}{5}$ inches.

[3] By experiment, made in 1688, it was found to contain only 224 inches.

Long Measures reducd to Inches.

1 Nail-*d,ro*. Pal-*t*. Hăn-ŏ. Spa-*n*. Foot-*ad*.
Cŭbĭ-*bei*. E (fl) ĕ*p* (eng) *ol*.
2 Y-*is*. Pa-*sy̆*. Fáth-*pe*. Ro-*bouk*. Furl-oindy̆.
Mĭ-*síĭty*. Le-miles 3.
3 H. Pal-*f*. Sp-*ad*. C-*ef*. F-*ous*. Ez-*bŏf*. Ar-*and*.
Schoen *andy̆*. Stă-*naug*. M-*ousth*.
4 G. Dōr-*f*. Lĭch-*ăz*. Orth-*ab*. Sp-*ad*. Pygm-*ak*.
Py̆-*dz*. O-*nau*. St-*naug*. M-*oiskyz*.
5 R. Unc-*ă,ri*. Pal-*f*. Pe-*bs*. Palm-dy̆, Cŭo-*ef*.
Gră-*ky̆*. Pass-*ky̆*. Stă-*byth*.

Proportions.

6 Line-be. Băr-*i*. DIGIT, INCH (Heb. Gk. Rom.)
nad: ,pulo: peldu[1]. [M[2] ·*eizth*.
7 FOOT—Eng-*ath*.—Grĕk-*ăzyp*.—[3] Rom (coss)
naup (st) *oupĕ* (vĕs) *oukau*.

Abbreviatures explaind.

Arabian pole, 3. Barley-corn 6. Cubit=pygem, pygon, pechus 1, 3, 5. Digit, 6. Doron=palm, 4. Ell (flemish, english) 1. Ezekiel's reed, 3. Fathom, 2, 3. Foot=pous=pes 1, 5, 7. Furlong=stadium 2, 3, 4, 5. Gradus, 5. Hand, 1. League, 2. Lichas, 4. Line, 6. Mile=milion=miliáre 2, &c. Nail 1. Orguai, 4. Orthodóron, 4. Pace=passus 2, 5. Palm=doron 1, 3, 5. Palmipes, 5. Passus=pace, 5. Pes=foot, 5. Pygme, 4. Pygon, 4. Rod, 2. Schœnus, 3. Span=spithame 1, 3, 4. Spithame=*span*, 4. Stadium=furlong 4, 5. Uncia, 5. Yard, 2.

Synonyms and Equivalents.

Ammah, cubit. Aulos, furlong. Chebal, schœnus, Cubit (lesser) pygme (greater) pechys. Dactylodochme, doron. Diaulos, 2 stadia. Dochme, doron. Gomed, span. Kaneh, Ezekiel's reed. Measuring-rod, schœnus. Mili are,-on: mile. Palæste, doron. Pathil, schœnus. Pechys, cubit. Perch, rod. Pole, rod. Pollex, uncia. Pous, pes. Tophach, palm, Ulna, cubitus, Zereth, span.

---

1 N. B. The *Digit* is sometimes divided into 4 *grains;* the *Line* into 6 *points.*

2 N. B. *A Sabbath day's journey* is reckoned to be 730 paces: 6 of which made the *Parasang*, 48 a *Day's journey.*

3 i. e. The proportion of the Roman foot to the English (divided into 1000 parts) is here exprest, as found——on the monument of *Cossutius*——on that of *Statilius*——on a congius of *Vespasian.*

Square Measures reducd to Square Feet.

E. Yar-*n*. Pace-*du*. Pŏle-ĕ*pe*,*r*ŏ. Roŏd *azkouz.*
Acrĕ-ŏ*tusy.*

G. Plethron——*axasf.* Aroura, the half: but
Ægyptian——*itdaun.*

R. Juger-*esout*y̆. Cli-*tisaŭ.* Vĕ-*nil*y̆. (mĭn)
A-*f*ŏ*ke* (qu) *at faux.*

Abbreviatures explaind.

Actus minimus, quadratus, 3. Clima, 3. Jugerum, 3, Versus, 3. Yard, 1.

MULTIPLICATION TABLE.

from 7
by 12

P-oi,*on*. P-*ei*,*us*. P-ou,*si*. K-ei,*so*
K-ou,*p*ĕ. N-ŏu,*eia*.
F-ad,*fei*. L-ad,*s*y̆. S-ăd,*oid*. P.
ad,*ko*. K-ad,*ouŭu*, N-ad,*axei*.

7 × 7
=49

NUMERICAL LETTERS.

R.
1 In Numerals] A less number, *afore*, Abates[1]; *after*, Encreases.
2 I-*b*. V-*u*. X-*az*. L-*uz*. C-*azỹ*. D-*ŭyz*, M (CIↃ[3]) *ath*; hence (CCIↃↃ) *byth*,

H.
3 א-*b*. י-*az* ק *ag*[4]—טו-*bu*[5]—from-*ug* by ךםןףץ to *ouzy*[6] CCCIↃↃↃ
4 .*ath* by the Units[7]: but oftner by אלף, prefixing the numbers[8] [*azyth*.

G.
5 α-*b*. ι-*az*. ϱ-*ag*[4]. ϛ-*au*. (*y*) koppă-*nỹ* (ταυ) sanpi-*ouỹz*[9]. ά (α ϙ α)-*azyz*
6 Ι-*b* Π-*ŭ*. Δ-*ǎz*. H-*ag*. X-*ath*. M-*azth*. Π-multiplies others inscrib'd in't[10].

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[1] e. g. IV 4, IX 9, XL 40, XC 90.

[2] e. g. —— VI 6, XIV 14, XIX 19, XXIX 29—— יא 11, ב 12: קא 101, קב 102——ια 11, ρα 101, &c.

[3] Form'd, in current writing, from M: part whereof, united, (viz. IↃ) became IↃ 500. hence IↃↃ 5000, IↃↃↃ 50000.

[4] i. e. Units, tens, hundreds, begin from the letters here specified; and are to be reckoned on, in order, from them. e.g. α 1, β 2, γ 3, &c. ι 10, κ 20, λ 30, &c. ϱ 100, σ 200 &c.

[5] Instead of יה, being the ineffable name of Jehovah.

[6] e. g. ך 500, ם 600, ן 700, &c.

[7] Before the letters expressive of hundreds; as, אדלך 1534: very seldom otherwise; אע 1070.

[8] e. g. אלפים 2000, גאפים 3000, לאלפים 30000, &c.

[9] The various figures and names of these numerical characters, see in my Table of Greek characters.

[10] e. g. Δ (10) inscribed in Π (5) is |Δ| (50.)

PRACTICE.

1. *If one*[1]? the sought *into* Price[2], or its factors[3]; or *by* Aliquot parts[4]. and by the Aliquots of Fractions of Sought (if any) *divide* Price[5].
2. *What'll One*[6]? the Price *by* Commodity[7]; but, if too large, *by* its factors[8].

1 i. e. In questions, where the conditional term is 1: as, when we say, " *If one* cost so much, what will so much cost?

2 i. e. Multiply *the* question-term, or thing *sought, into* the *price* &c.——e. g. *If one* costs 10s. what will 20 cost? &c. Answ. 20 (the thing sought) ⋈ 10 (the price)=200s. i. e. 10l.

3 viz. when more commodious.———e. g. *If one* cost 12 | 6, what will 14? Answ. The factors of 14 being 2 ⋈ 7; say 2 ⋈ 12 | 6=25s: then 7 ⋈ 25s.=175s. i. e. 8l. 15s.—— N.B. If the multiplicator be not resolvable into factors, take those that come nearest it, and add the price for the odd one, or multiply it by what the factors want of the multiplicator.

4 Divide it *by* the *Even parts* of the denomination, in which you would have the answer.—e. g. *If one* cost 12 | 6, what will 14? Answ. 10s. being the ½ of 1l. and 2 | 6 (which makes up the 12 | 6) the ¼ of 10s: say 2 in 14=7l. then, 4 in 7 (the quotient of 14 by 2)=1; and there remains 3l. which, in the next inferior denomination (viz. Shillings) is 60, then 4 in 60=15s.

Thus	. . .	14				14 pds. pks. &c.					
divided by	s	$10\frac{1}{2}$	gives	7	.	10	2	gives	7	-
		2				2	5		1	8
	d	$6\frac{1}{4}$		1	15	6	4		-	7
		S 12:6		L 8:15		S 12:6			L 8:15	

5 As in the following example:

C	qr.	lb			l	s	d		
84	3	11	at		1	1	10		
1l. s1=21 s			qr	$2\frac{1}{2}$	-	10	11		
Aliq. nots of 18		84		$1\frac{1}{2}$	-	5	5	2
		168	lb	$7\frac{1}{4}$	-	1	4	1
d$6\frac{1}{2}$		42		$4\frac{1}{7}$	-	-	9	1
$4\frac{1}{3}$		28						
q3. lb11. s18:6			$\underbrace{\text{3q. 11lb.}}_{\text{aliq. of fract.}}$		$\underbrace{\text{18 6 -}}_{\text{pr. of fract.}}$				

In all.. 1852:6 The answer: which, being
halv'd gives - { 92:12:6; the price of C 84: qr 3: lb 11.

6 i. e. In sums, wherein the Question-term is 1; as when we say, " If so much cost so much, *What'll one* cost?"

7 e. g. If 12 cost 10 | 6, what will 1? Answer, 12 in 10 | 6 I *cannot have*: but 12 in 10 ⋈ 12 (to reduce it to

pence)=120+6=126: then 12 in 126=10d. and 6 remains; which multiplied into 4 (to reduce it to farthings) is 24: then 12 in 24=2 q.

Thus { in s 10 : 6 : - | or, by the factors of
12 - 10 2 | 12, viz.
2 ⋈ 6, or 3 ⋈ 4; as in the following:

8 The foregoing example will stand

Thus { in s 10 : 6 : - | in s10 : 6 : -
2 5 3 - | 2 3 6 -
6 10 2 | 4 - 10 2

So the answer is found more easily than by dividing by 12: much more so it will be, when that number is higher.

RULE OF THREE.

All Questions in it answerd (1) *by one stating* (2) *the same way.*

(1) CONDITIONAL in one line: and, opposite, the terms CORRESPONDING:

(2) -DEND is the -Ducing of one *into* -Duc'd of the other: the Rest SOR [1].

N.B. *No-Duc'd:* the facit of one line divide by that of the other [2].

---

[1] i. e. *The producing*[a] terms *of one* line multiplied into the *produc'd*[b] *of the other,* give the diviDEND; and *the rest* of the terms multiplied together, give the diviSOR: the Quotient falls to the blank[c].——(a) *Producing* terms are such as jointly produce any effect. e. g. whatever is considerd as a *cause,* with the adjuncts of *time, distance, measure, &c.*——(b) *Producing* terms are such as are connected with the others under the character of *price, purchase, produce, gain, loss, interest, advantage, value or quantity of work, &c.*—— (c) e. g. At the rate of 6 per cent: per ann. what is the interest of 200l. for 18 months? Answ. The terms being stated, as they offer (without any other regard than Which are conditional, and Which imply the question) Thus:

Interest	Principal	time
6l.	100l.	12 m.
	200	18

or in any other order agreeable to the directions in the rule say " 6 (the produced term of one line) ⋈ 18 ⋈ 200 (the producing terms of the other)=21600 (for the dividend): And (the rest) 100 ⋈ 12=1200 (for the divisor). Then 21600÷1200=18, the answer; viz. 18l.

2 i. e. If there be *no produc'd* term (as generally happens in the single rule of three inverse) *divide the facit*, &c.-- e. g. How much stuff, yard-broad, will line 10 yards of cloth, yard-and-quarter broad? The terms being stated thus:

broad	long	
4 qrs		say 5 ⋈ 10=50 and 50 ÷ 4=12 24th
5	10 yard.	i. e. 12 yards and 2-4 or ½.

SUBTRACTION.

May be more commodiously performed by *Addition*; as in the next article.

TABULATING.

To multiply and divide by Addition only.

1. Twice-double-Multiplicand facits † every multiplicator. † *gives the f. of.*
2. Tabulate Divisor: Quote next digit-under: Subtract by Addition.

1. In the MULTIPLICATION sum (1) the facits of the multiplicand *twice doubled*, are, as they stand against the digits 2 and 4. Then, To multiply the multiplicand——into 8 (the last figure of the multiplicator) double the facit of the digit 4——into 6 (the 2d figure, &c.) add the facit of 4 to that of 2 (=6)——into 7 (the next figure, &c.) add together the facits of 1, 2, 4 (=7) placing each of them, as in the common method of multiplication.

2. In the DIVISION-sum (II) (1) *Tabulate the divisor*, as in the example, viz. against the digit 2, by adding the divisor to itself; against 3, by adding together the

		Multipli-cand	*cator*		
Digits.	1	98765 ⋈	768		
	2	197530	(1)		
	4	395060			
		——*by*			
Facits.		790120	8	*Divisor.*	
		592590	7		
		691355	6		
		——(II)			*Digits.*
Dividend.		75851520÷	768		1
		673794	1536		2
		5898	2304		3
		43.	3072		4
Quotient		(III)	3840		5
		98765÷968	4608		6
		1929 1936	5376		7
Quotient:		102	6144		8
		——	6912		9

totals of 2 and 1; against 4, by adding the total of 2 to itself, or that of 3 to that of 1; and, in like manner, in the rest, by adding together the totals of any two or more digits, equal to the digit whose total is sought. Then, (2) *Quote* (or, for the quotient, take) the *digit* against the total *next* less, or *under* the first corresponding figures of the dividend, viz. 7585. Then, instead of subtracting, according to the common method, the facit of the divisor by 9 (viz. 6912) from (7585) the corresponding figures of the dividend (3) *Subtract by addition*, and say [not, 2 from 5, and there remains 3; but 2, and (so much as will make 5, viz.) 3 is 5: then 1, and (as much as will make 8, viz.) 7 is 8: then 9, and [what will make 15 (since 9 cannot be taken from 5) viz.] 6 is 15[a], then 1, that I borrow, and 6 is 7: and so on.——In the Division-sum (III) it appears that——All the tabulating necessary to find the quotient, is only to double the divisor: for, the total next less than (the 1st dividend) 987, is 968; therefore quote 1: then (the 2d dividend) 196 has no total less; therefore quote 0: then the next total less than (the 3d dividend) 1965, is (the 2d total, viz.) 1936; therefore quote 2.——And, in like manner, may be tabulated any sum, by steps, as there shall be occasion.

(a) N. B. 15, being the last sound in the mouth of the operator, does more readily and certainly remind him of what he borrowd, than in the common way of subtraction; which is no small advantage to this method.

WEIGHTS.

Troy Weight, for Gold, Silver, Jewels, Grains, and Liquors.

Monyers reducd to Blanks.

1 Mon. Pĕrĭt-*ef*-Droit-*oky̆* Mĭte-*abth-ă*dy̆ Grain-*dizozy*.

Goldsmiths and Apothecaries Weight reducd to Grains.

2 (Gold,) Căr-ŏ [1]. Pen-*d*ŏ (Pŏ.) Scrup-*dy̆*. Drăm-*auz*. Ounce-*oky̆* Pŏ-*loisy*.

Averdupois Weight, for Baser-metals, Bread, Mercery, Grocery, &c.

Wool, reducd to Pounds.

3 Clove-*oi* Stone-*bŏ* Tŏd-*ek* Weigh-*beid.* Sack-*tauf.* Last-*fisei.*

Other Things.

4 Pound-ounce-*as.* Hun-póunds-*abe.* hún-Fother-*án-are:* Tun-*ez.*

Hebrew Weights, reducd to Grains.

5 Zura-*lf.* Bek-*azei.* Shĕk-ĕ*bei* [2]. Măn-ĕ*beizy̆.* Tăl-*amnyth.*

Greek and Roman Weights.

6 Lens, *kŭrăbe.* Lept *aurek.* Chalch-*ă,rĕ* Sil, *t,rĕk.* Ob *ou-trek.* 6

7 Script-*ak,traf.* Dra-*lf,ouraf.*—Sext-*oid,aurp.* SĭcĭI-*azn,erp.* 7

8 Duell *bol,uroi.* ——Unc-*fip,roi.* —— Libra-*lefu-lroi.* 8

Proportions.

9 GRAINS English-*bif,re* make French-*alei,*Dutch-*apou.*

10 OUNCE has grains Avĕr-*ofei,* Troy-*fouz* [3]: as *eiy* to *oii* [4].

11 POUND Aver-heavier than Troy by 2 ounces, 4 drams, and 2 scruples.

Abbreviatures explaind.

Bekah, 5. Carat, 2 Chalchos, 6. Drachma, 7. Duella, 8. Hundred-weight 4. Lepton, 6. Maneh, 5. Obolus, 6. Penny-weight, 2. Pound, 2. Scriptulum, 7. Scruple, 2. Sextula, 7. Shekel, 5. Sicilicus, 7 Siliqua, 6. Talent, 5. Uncia, 8. Zuzah, 5.

Synonyms.

Gramma, scruple. Keration, siliqua. Lens, grain. Litra, libra. Quintal, hundred-weight. Sitarion, grain.

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[1] N. B. The *Grains*, us'd in weighing *Diamonds*, are somewhat lighter than those us'd in gold, &c.

[2] i. e. 218, according to Bp. Cumberland: 268, according to father Mersenne.

[3] So that the averdupois-ounce is less by 42 grains than the troy-ounce; which amounts to near a 12th part of the whole.

[4] i. e. 73 ounces-troy make 80 ounces-averdupois.

Astronomy.

MARCH,

The 1st Day, to find on what Day of the Week it happens.

1 The year, more 2 and even-4th, divide by 7:
[given
2 By what rĕmains (fŏr 0 sat 1 sund. ănd-sŏ-on) it is

E. G. *Ann. Dom.* $26 + 2 + 6$ (its even 4th) $= 34 \div 7$, remains 6: i. e. friday; accounting saturday 0, sunday 1, monday 2, &c.——*Before Christ*, reckon Backward; viz. sunday 1, saturday 2, and so on to monday 0. e. g. Bef. Ch. $7 + 2 + 1$ (its even 4th) $= 10 \div 7$, remains 3; i. e. friday.——Of the other months to find the 1st day, and consequently what day of the week any day is; V. Signs.

MONTHS,

The Number of Days in each, with the Days of the Nones and Ides.

Ap Sĕ Nŏ June-*iz* [1]: Mar Mă Jŭl Oc, NO-*p*, ID-*al* [2] -
in the Rest, *l*.. *at* [3].

[1] February, it is well known, has 28 (in the leap-years 29) the rest 31.

[2] i. e. The *Nones* are on the 7th day, the *Ides* on the 15; in these 4 months.

[3] i. e. The *Nones* are on the 5th, the *Ides* on the 13th: in the rest.

MOON.

Cycle and Epact.

Golden's remainder of year-more-1, divided by 19[1].
Epact's the cycle into *ab*: above *iz* by *iz*, the remainder[2].

Change and Age.

New's the remainder of month-from-march and epact, less *iz*, *auz*[3].
Ap. Se. No. Jun. less *en*——For Jan. Mar. *o*. Feb. Apr. 1 add.
Full's 15 days from the change—Waining, east; Growing, west is enlightend[4].

Rising and Setting.

At Sun-set, sets *New*, rises *Full*; and, each day, minutes *ub* more.
Shining (in Waining) Subtract (in Encreasing) Add to Sun-rise,-set.

Southing and Tides.

Southing's the age into *ok*, by 60: from *al*, the excess take[5].
High-water at London-bridge: two hours and a half after Southing[6].

---

[1] e. g. $1737 + 1 = 1738 \div 19 = 10$: remainder 9, for the cycle, or *Golden number.*

[2] e. g. 9 (the cycle) $\times\, 11 = 99 \div 30$ (as being above 30) $= 9$: remainder 9 for the epact.

[3] e. g. May 20 (1737) What is the moon's age? Answ. 3 (the number of the month from march, inclusively) + 9 (the epact) $= 12 - 10 = 18$: the day of the new moon

when it is said to change. So the moon, on the 20th of may, is 2 days old.

4 i. e. The Horns are turnd, in *Decreasing* (from the Full) West-ward; in *Encrasing* (from the New) Eastward.

5 e. g. April 15 (1737) When comes the moon to the meridian? Answ. The moon's age is 26: the excess above (al) 15, is 11. Then 11 × 48 = 528 ÷ 60 = 8 h. 48 m. for the Southing.——For the readier working, the rule may be thus exprest: "*Age into* 4, *by* 5 : *into* 12 *the remainder gives minutes.*" e. g. 11 × 4 = 44 ÷ 5 = 8 h: remainder 4 × 12 = 48 m.

6 e. g. Apr. 15 (1737) the moon Souths at 8 h. 48 m. Then 8 h 48 m. + 2 h. 30 m. = 11 h. 18 m. (N. B.) If the amounts to more than 12; the excess shows the hour.

THE 12 SIGNS

or Portions of the Zodiac, nam'd from Constellations once in them: their Names, Characters, and corresponding Months; with a Key to find the Sun's Place on any Day[1]*; and on what day of the Week the* 1st *Day of any Month happens* [2].

1	Ar	ma	*n*[1] *ă*[2]	♈	Aries
2	Taur	apr	*ou* f	♉	Taurus
3	Gĕmĭ	may	*k* s	♊	Gemini
4	Cance	jún	*p* e	♋	Cancer
5	Lĕ	júl	*p* f	♌	Leo
6	V	au	*p* pJ	♍	Virgo
7	Líb	se	*p* ĭ	♎	Libra
8	Sc	oc	*s* ŭ	♏	Scorpio
9	Să	no	*p* *ă*	♐	Sagittarius
10	Că	de	*k* t	♑	Capricornus
11	Aquă	ja	*n* s	♒	Aquarius
12	Píscĕ	feb	*ba* d	♓	Pisces

---

[1] The method is this: To the day of the month (+11 for the old style) add the number signified by the numerals *n*, *ou*, &c. the Sun (—30, if above 30) is in the degree of the sign corresponding to the day of the month. E. G.

Feb. 10 + 11 (for the old style) + 11 (for the numeral *ba*) = 32—30 = 2° of ♓.

2 Thus: From the day on which March 1st happens (V. March) for any other month, count forward so many days as are signified by the numerals *a*, *f*, &c. E. G. Mar. 1st, 1737, was tuesday; therefore Apr. 1st [counting (f) 4 onwards, tuesday being one] is friday: and, consequently, the 8th, 15th, 22d, 29th, are fridays; whence may be known the rest. [N. B. Jan. and Feb. are reckond from Mar. of the preceding year.

SUN.

The Time of its rising each Day.

1 Jăn-*o*[1]. 7 Febr-*ei*. 6 Mar-*by̆*. 5 Apr-*ou*. M-*as*†.
4 Júl-*p*. 5 Aug-*at*. 6 Sept-*ad*. 7 O . . *be*. 8 N-*al*†.
† JUN-d*a*, *the* Longest, *i fi*[2].——the Shortest *ei boi*, DECEM-*da*‡

For the intermediate Days.

Sought, into 60, by All, gives *Min.* fewer 1st line, more 2d[3].

The Time of its Setting, each Month, &c.

Setting's the complement of rising to 12; and, doubled, the day gives[4].

Cycle and Dominical Letter.

Cycle's the remainder of year-more-9 by *ek*[5]: if 0, *ek*[6].
ek cycle's A; *ep*, B; and so on[7]; e'ery 4th has 2[8] (next
after these 3ds: *d* E, *au* G, *a-y* B, *bo* D, *aei* F, *de* A, *dau* C) and
FORMER is us'd till Feb-*do*, in Leap-years; and, after, the LATTER.

To find the Sun's Place in the Zodiac, V. Signs.

[1] i. e. On *Jan.* 4, the Sun rises at 8.

[2] i. e. On *Jan.* 21, New style (which is the *Longest* day) the Sun rises at 3 h. 43'.

3. i. e. The day *sought* (reckond from the day of the Sun's rising) multiplied into 60, and divided by the number of *All* the days between the day of the Sun's rising (specified) in any month, and the day of its rising in the next; *gives* the *Min*utes *fewer* (or, to be subtracted from the hour specified) in the 1*st line; more* (or, to be added) in the 2*d line.* ——e. g. Apr. 13, I would know when the Sun rises. By 5 Apr-*ou* I find that the day sought (reckond from the day of the Sun's rising, viz. the 9th) is 4 [for 9 + 4 = 13]. Then 4 × 60 = 240: and 240 ÷ 36 (the number of All the days from 5 in Apr. *ou* to 4 M-*as:* i. e. from 9, the day the Sun rises at 5 in April; to 16, the day the Sun rises at 4 in May) = 6′ [and 24-36th i. e. by reduction] 40″ : — 5 h. (the day it rises on the 9th of April) = 4 h. 53′, 20″, then, therefore the sun rises on that day, viz. Apr. 13.

4 Thus, Dec. 21, New stile, the sun rises at 8 h. 17 m. *the complement of* its *rising to* 12 is 3 h. 43′ [for 8 h. 17 m. — 12 h. = 3 h. 43 m.]. The sun therefore *sets* at 3 h. 43 m. *and* this, *doubled, gives* the length of *the* day, viz. 7 h. 26 m. shorter by 9 h. 8′. than the longest; which (by the same calculation) will be found to be 16 h. 34′.

5 e. g. 1737 + 9 = 1746 ÷ 28 = 62 the number of revolutions since Christ) remainder 10, for the number of the cycle.

6 i. e. If there be *no remainder,* it will be (*ek*) the 28th, or last year of the cycle.

7 i. e. The dominical letter answering to the year of the cycle 28 is *A:* to 27, *B; and so on* (backwards) to G, the 7th and last: after which returns A, B, &c.

8 e. g. *Every* 4*th* (or Leap year [a]) *has* 2 dominical letters: the *latter* of which is us'd after Feb. 24, the intercalary day; which is therefore denoted by the same letter as the 23d.——N. B. For the readier finding the dominical letter answering to any number of the cycle, I have given (in parenthesis) those of every third: thus (*aei* F) F answering to 18 (one of the 3ds there specified), 17 (the next 4th, reckoning backwards) will be G A; 16, B; 15, C; &c.

(a) For the readier finding Leap-year, the rule is this: "*Year sought divide by* 4*; what's left will be, for leap-year,* 0; *for past,* 1, 2, *or* 3." e. g. 1737 ÷ 4 = 434: remainder 1, for 1st after leap-year.

Chronology.

Roman Manner of Dating.

(1) Kal. Non. Id. (2) Pridie. (3) Tert. quart: (nb)
The day sought substract from
One mŏre thăn Ide-None-days ; *Two* more thăn thĕ
month's, fŏr thĕ Kalends.

I. i. e.) For the days on which the Kalends, Nones, Ides of any month happen (V. Months) write (e. g.) *Kal.* Dec. on the kalends of december, viz. the 1st day of December. (2) On the day preceding each of them, write (e. g.) *Pridie* Kal. Dec. i. e. pridie kalendas decembris, on the day before the kalends of december, viz. the 30th of november. (3) For the days backward, write *Tertio, Quarto, &c.* i. e. on the 3, 4th, &c.

II. To find any of the days, e. g. —— (1) 10th of december, What, in the Roman style? Answ. 10—14 *(One more than the days the ides happen on)* = 4. i. e. 4to id. dec. Again (2) 4to id. dec. What, in the English style? Anws. 4 — 14 = 10. i. e. the 10th of december —— (1) 20th of november: Say 20—32 (*Two more than the number of the days in the month*) = 12. i. e. 12mo. kal. dec. (2) 12mo. kal. dec. say 12 — 32 = 20.

EPOCHAS.

Their Commencement in the Julian period

WORLD	*pauf*	764	of the World	*from the* creation (A. M. or O. C.)
CHRIST*	*opaf*	4714	of Christ	birth of *Jesus Christ* (A. D.)
Act	*óski*	4683	Actian	defeat of Antony at *Actium.*
Agon. capit.	*opnou*	4799	Capitoline	institution of the *Capitoline* games.
Báb	*doke*	2482	Babylonian	beginning of the *Assyrian* monarchy.
Cyr	*obkí*	4183	of Cyrus	end of the captivity under *Cyrus.*
Del	*efan*	2419	Deluge	Noah's universal *Deluge.*
Dioclesi	*onnoi*	4997	Dioclesian	persecution under *Dioclesian.*
Exod	*idáp*	3217	Exodus	*Going* of the Israelites *out* of Egypt.
Heg	*util*	5335	Hegira	*Flight* of Mahomet to Mecca.
Indict	*uzel*	5025	Indictions	institution of the *Indictions.*
Juli	*ospa*	4671	of Julius	reformation of the calendar under *J. Cæsar.*
Nábon	*inaup*	3967	of Nabonassar	reign of *Nabonassar* king of Babylon.
Olympic	*inik*	3938	Olympic	institution of the *Olympic* games.
Philip	*ótni*	4393	Philippic	succession of *Philip* to Alex. the Great.
Rom	*insa*	3971	Rome built	building of the city of *Rome* (U. C.)
Sel	*ofyt*	4403	Contracts	reign of *Seleucus* king of Syria, etc.
Spanish	*ospau*	4676	Spanish	defeat of the *Spaniards* by Calvinus.
Tróy	*tute*	3532	Troy taken	taking of the city of *Troy.*
Yezdegir	*utof*	5344	Yezdegirdic	death of *Yezdegird* king of Persia.

* CHRIST born A. M. *fyze.* Jew-*tpaud.* Greek, ecc-*lonf*: civil-*ulzou.*

To find

1. { *The year of the* Julian *period corresponding to any year in any Æra.*
2. { *Any year of any* Æra *by the corresponding year of the Julian period.*

1) { JUL——for *After* add Comm-less-1——for *Afore* take from Comm.
2) { ÆR——*After,* Comm-less-1 take for Corr — but *Afore,* Corr. from Comm.

1. *What year of the* JULIAN *Period* is the year 1737 (1) before Christ? (2) after Christ?————Answ. (1) 1737 (before Christ)—4714 (the year of the *comm*encement of the Christian æra in the Julian period) = 2977. (2) 1737 (after Christ) + 4713 (the *comm*encement-*less*-1) = 6450, the year of the Julian period.

2. *What year of the* CHRISTIAN *Æra* is the year of the Julian period (1) 2977? (2) 6450?————Answ. (1) 2977 (the year of the Julian period *corr*esponding to the year of the æra sought)—4714 the *comm*encement of the Christian æra) = 1737. (2) 6450 the *corr*esponding year) — 4713 (the *comm*encement-less-1) = 1737.

* *For the Number of Years from the Creation to the Birth of Christ.*

———The *Christian* vulgar æra commences in the year of the world 4004, jan. 1. [according to Helvicus, Isaacson, &c. 3948]———The *Jews* place the creation of the world, Later by 242 years, viz. in 3762, oct. 7.———The *Greek* historians, on the authority of the septuagint, Sooner by about 1490, or 1500 years, viz. the *ecc*lesiastical, in 5494; the *civil,* in 5509.

FESTIVALS,

Holy-days, Feasts, &c.

IMMOVEABLE.

Christ.

Nát-de,*du* [1], Círc-ja,*b*. Epiph-ja,*s*. Lámm-au,*b*. HoRood-se,*bo*. Transf-au,*s*.

Mary.

Ann-măr,*el*. Púr-feb,*e*. Nat-se,*k*. Vís-jul,*e*. Cónc-de,*k*. Ass-au,*al*.

Saints.

All-nŏv,ă. And-nov,*iz*. Bap-jun-*ef*. Bárnaby-jun,*ab*. Barth-aug,*éf*. George-apr,*et*. James-jul,*du*. Innŏcĕnt-dee,*dei*.

John-dec,*doi*. Luke-o,*ak*. Mark-ápri,*du*. Mártinovemb,*ad*.

Mátt-se,*da*. Paul-jan-*du*. Pet-jun,*dou*. Phíl Jaco-may,*a*.

Sím Jud-o,*ek*. Ste-de,*dau*. Tho-dec,*da*. Válentine-feb,*af*.

Royal Family, 1737.

Cór-o,*ba*. PróclAjun,*ab*. Born,King-o,*ty* : *seit*. Queen-mar,*a* : *seid*.

Wáles-ja,*ty* : *pyp*. -cess-n,*ak*. AnOr-o,*de* : *pўn*. Ame-ma,*iz* : *pab*.

Car-ma,*iz* : *pát*. Will-apr,*al* : *pib*. Már-fe,*de* : *pet*. Loui-d,*p* : *pef*.

Terms, as in 1737.

Terms hold. weeks *al* : dáys Hilar-*eb*. East-*ép*. Trin-*dy*, Mich-*tau*.

Bil from ján-*di* to feb-*be*——Mich from óc-*do* to nov-*ek*.

East, wĕd-*e* áfter, begins : ends, âfter ascénsion, mond-*a*.

Trin, friday áfter, begins ; and ends 3d wĕdnesday after.

Vac. holds weeks *toi* : dáys Hilar-*oit*. East-*ap*. Tr-*abs*. Mich-*us*.

Quarterly.

Lády-mar,*el.* Midsum-jun-*ef.* Mich-sep,*dou.* Chri-dec,*al.*

State Holidays.

Fire-sep,*e.* Poud-no,*l.* Márt-ja,*ty.* Réstor-may, *dóu.* Revo.feb,*at.*

MOVEABLE.

1 *Before and after Easter.* 2

1 { Sept-*st* [2]. Sex-*us.* Shrove-*ón.* Qua-*fe.* Lent-*os.* Pál-*p.* Maund-*i.* Good-Fri-*d.*

EASTER's the first Sunday after first Full-moon after March-*da.*

2 { Low-*oi* [2]. Róga-*tu.* Asc-*in.* Whits-*on.* Trín-*lau.* Ad-*eta.*

EMBER-*days.* We Fri Sát, after Quá Whit Ho Róod Luci-*dec,at.*

EASTER TABLE 3.

Paschal full-moons for the Golden-numbers, with the Hebdomadal Letters.

1	A	*l*	d	8	A	*bei*	c	15	A	*a*	g
2	M	*el*	g	9	A	*oi*	f.	16	M	*ea*	c
3	A	*bi*	e	10	M	*eoi*	b.	17	A	*n*	a
4	A	*e*	a	11	A	*bu*	g	18	M	*-eou*	d
5	M	*ed*	d.	12	A	*f*	c	19	A	*-boi*	b
6	A	*by*	b	13	M	*eo*	f				
7	M	*iz*	e	14	A	*pe*	d				

Use of the Table.

Súm from Hebdóm to Domín (of the year sought) ádd to the Month's day.[4]

Synonyms, &c.

Ash wednesday, 1st day of lent. Candlemas, purification of the virgin M. Crucifixion, good-friday. Holy-thursday, maunday. Holy-week, last of lent. John the Baptist, midsummer. Parasceue, good-friday. Passion-week, last of lent. Pentecost, whitsuntide, whitsontide. Processioning-day, ascension day. Quinquagesima, shrove-sunday. Shor-(Shur-)thurs-day, maunday-thursday. Twelfth-day, epiphany.

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[1] i. e. The *nat*ivity of Christ is on *dec.* 25. and so of the rest.

[2] i. e. —— *Sep*tuagesima-sunday is (st) 63 days *before* Easter [70 before the octave of easter] —— *Low* sunday is (oi) 7 days *after* Easter, and so of the rest.

[3] The *Easter-table* consists of 5 verses, each ending at a period mark; and may be read thus: "One-ald, two-melg, three-*ăl·ĭ* e, (four A ĕ *ă*, five medd." &c.—Its *Use* is to find Easter-sunday for ever. V. n. 4.

[4] e. g. A. D. 1737, the golden number is 9, the dominical letter B. then, against 9 (in the table) the hebdomadal letter is F. from thence to the dominical B. are (g a b) 3: which added to apr. 7 (the day of the month, in the table) gives ap. 10, for easter-sunday.——So A. D. 1736, golden-number 8, 1st dominical-letter C: then from C (in the table) to C (dominic.) 7 + apr. 18 = apr. 25.

Geography.

In the following verses (which contain as much, I think, as is necessary to charge the memory with by way of foundation) I have given the most general divisions of the several parts of the terraqueous globe; beginning, in each, with the most northerly parts, and, in descending southwards, proceed (to the right) from west to east: so that children, with a few hints and occasional helps, may be able to find them, by themselves; and thereby fix them better in their memory; after which they will easily get the verses by heart, and be well prepared to consult the gazetteer, or to go through any system, with pleasure, to good advantage.

LAND.

Continents, Isles, Peninsulas, Isthmus, Capes, Mountains.

CONTINENTS.

Europe, Africa, Asia, and America.

AF (8) Bar (féz mor a túu trĭpo bárc) Bi (dar) Egy̆ (ălex cair)

Zaár (zu) Ne (tómb) Nubi (dáng) Gui (ma why be lo cáng) Ethi (mon eaf)

AM (23) Green Brít Wa La Cán Acad Eng Jers Pén Mary Virg Car

Geor Kent. Flór (ang pens) Mex (uád mi ta jú chi gaut hon ver)

Firm (pa ca már venez ánd gra po cóm dari) Per (quito lím charc)

Am: Rrăsĭ (sál seba vin) Chil (já) Para (guai tucu plat) Mag

AS (5) Tăr (ă síb che thi) Túrk (tn na cúrd sy di ár) Pe (der isp gomb)

Ind (mōg āg beng: vis go bi mál: pe to sí co) Chi pek nank

EUR (18) Nor-*berg*. Swede-*stock* (Scot-*ed'n*. Ire-*dúblin*. E-*london*)

Dén-*cŏp* Hŏl *amst*. Fland-*brúss*. Ge-*vién*. Po *wa*. Russ-*petre:* France-*par*.

Switz-*basil*. Húng-*presb*. Port-*lisb*. Spáin-*mad*. Itál-*ro*. Tu-*constant*.

AFRICA.

Barbary comprehends the kingdoms of Fez, Morocco, Algiers, Tunis, Tripoli, Barca. *Bildulgerid:* Daara. *Egypt:* (ch cit.) Alexandria, Cairo. *Zaara:* (ch. prov.) Zuenziga. *Negroland:* Tombute. *Nubia:* Dangola. *Guinea:* Malaguette, Whydaw, Benin, Loango, Congo, Angola. *Ethiopia:* Monemugi, Monomotapa, Caffraria.

AMERICA.

Greenland, New-Britain, New-Wales, Labrador,

Canada, Acadia **or Nova Scotia,** ***New-England, New Jersey, Pensylvania, Maryland, Virginia, Carolina, Georgia, Kentucky. Florida*** **(ch. towns) St. Augustine, Pensacola.** ***Mexico:*** **(ch. prov.) Guadalajarra, Mechuacan, Tabasco, Jucatau, Chiapa, Guatimála, Honduras, Verágua.** ***Terra-Firma:*** **Panama, Carthagéna, St. Martha, Venezuela, Andalusia, Granada, Popayan, Comana, Darien.** ***Peru:*** **Quito, Lima, Los-Charcos.** ***Amazonia. Brasil:*** **(ch. cit.) St. Salvador, St. Sebastian, St. Vincent.** ***Chili:*** **St. Jago.** ***Paraguay:*** **(ch. prov.) Guaira, Tucuman, Rio-de-la-Plata.** ***Terra-Magellanica.***

ASIA.

Tartary: (ch. prov.) Astrachan, Siberia, Chenyang, Thibet. *Turkey:* Turcomania, Natolia, Curdistan, Syria including Palestine, Diarbec, Eyraco-Arabic. *Persia:* (ch. cit.) Derbent, Ispahan, Gombroon. *India:* (ch. prov.) empire of the Great Mogul (Agra, Bengal) Visiapour, Golconda, Bisnagur, Malabar, Pegu, Tonquin, Siam, Cochinchina, *China:* (ch. cit.) Pekin, Nankin.

EUROPE.

Norway: (ch. cit.) Bergen. *Sweden:* Stockholm. *Scotland:* Edinburgh. *Ireland:* Dublin, *England:* London. *Denmark:* Copenhagen. *Hollnda:* Amsterdam. *Flanders:* Brussels. *Germany:* Vienna. *Poland:* Warsaw *Russia:* Petersburgh. *France:* Paris. *Switzerland:* Basil. *Hungary:* Presburg. *Portugal:* Lisbon. *Spain:* Madrid. *Italy:* Rome. *Turkey:* Constantinople.

Capes, Islands, Peninsulas, and Mountains.

CAPES: La Li St-*éng*. Fi Vi-*spáin*. Bla Ve Góod-*afri*. Cóm-*malab*. Horn-*fueg*.

ISLES: Zĕ-*den*. Az-*pŏ*. Să Síc Ca Cy-*méd*. Ma Ca-*bárb*. He·*gui*. Mad-*eth*.
Mald Ceyl Súm Bo Su Jáv Phi Mo Ladr *ind*. Newf-la. So-*south-seas*.
Béı-*flo*. Ba Cú Jam Hi Ríc, Carib (ánt ne mo barb) *mex*. Fueg-*mag*.
PEN: Jŭ-*de*. Mó-*gre*. Pre-*tárt*. Afri. Cámb. Malac-*índ*. Mex-*amer-north*.
MOUNT: Chěvĭ-*scot*. Pyr-*spain*. Alps-*ít*. Cauca-*tárt*. Apalach *n am*.

CAPES.

Land's-end, Lizard, Start-point (of) *England*. Finisterre, St. Vincent's, *Spain*. Blanco, Verd, Good-Hope, *Africa*. Comorin, *Malabar*. Horn, *Fuego*.

ISLES.

Zealand (in) *Denmark*. Azores (west of) *Portugal*. Sardinia, Sicily, Candia, Cyprus (in the) *Mediterranean*. Madeiras, Canaries (against) *Barbary*. St. Hélena, *Guinea*. Madagascar, *Ethiopia*. Maldives, Ceylon, Sumatra, Borneo, Sunda, Java, Phillippines, Moluccas, Ladrones, *East-Indies*. Newfoundland, *Labrador*. Society-Isles (in the) *South-Seas*. Bermudas (against) *Florida*. Bahamas, Cuba, Jamaica, Hispaniòla, Porto-Rico: Caribbees (Antigua, Nevis, Montserrat, Barbadoes, *Mexico*. Fuego, *Terra-Magellanica*.

PENINSULAS.

Jutland (in) *Denmark*. Morea, *Greece*. Precop. *Tartary*. Africa. Cambaya, Malacca, *East-Indies*. Mexico, *North-America*.

MOUNTAINS.

Cheviot (between) *Scotland* and *England*. Pyrenees, *Spain* and *France*. Alps, *Italy* and *France*. Caucasus (in) *Tartary*. Apalachian, *North-America*.

WATERS.

Oceans, Seas, Gulphs, Straits, Rivers, and Lakes.

OCEANS: Hyp. Ethi. East. Alt-West. Paci-South-del Zur. Ice.
SEAS: Ba *de-Swede,* Chan-*éng,* Med-*eu,áfr,* Black *eu,as.* Casp-*tartar.*
GULFS: Bo Fi-*swéde,* Ven-*itál,* Red-*arab,* Pers. Béng. Baff Hu-*north-am.*
STRAITS: Sound-*bált,* Gi-*med,* Ilél-*bla.* Ba *réd.* Sun-*in.* Húd-bu. Da-*baff.* Mag.
LAKES: Lad O-*russ,* Ne Lo-*scot,* Ge Lu-*switz.* Baba-*pérs.* Bon-*ne.* Par-*firm.*
RIV. Vŏ-*cit.* Dan-*bla.* Rhi-*ger.* Rh Eb Níl-*me* T. Eu-*pers.* Ga-*be.* Mis-*mex.*

OCEANS.

Hyperborean or northern. Ethiopian. Eastern, Atlantic or western, Pacific or south, or mare del Zur. Icy near the South Pole.

SEAS.

Baltic, east of *Denmark* and *Sweden.* Channel, south east of *England,* Mediterranean, between *Europe* and *Africa* and part of *Asia,* Black sea, between part of *Europe* and *Asia.* Caspian, in *Great Tartary.*

GULFS.

Of Bothnia and of Finland, in *Sweden.* Of Venice, east of *Italy,* Red-sea, between *Arabia* and *Africa.* Persian Gulf. Bay of Bengal in *Asia.* Baffin's and Hudson's Bays in *North America.*

STRAITS.

Sound (of the) *Baltic.* Gibraltar, *Mediterranean,* Hellespont, *Black-sea.* Babelmandel, *Red-sea.* Sunda, *Indian-ocean,* Hudson's, *Button's-bay,* Davis's, *Baffin's-bay,* Magellan, *South America.*

LAKES.

Ladoga and Onega, western part of *Russia.* Loch-Ness and Lomond (in) *Scotland.* Lakes of Geneva and Lucern, *Switzerland.* Babacombar, *Persia.* Bornou, *Negroland.* Parime, *Terra Firma.*

RIVERS.

Volga (falls into the) *Caspian-sea.* Danube, *Black-sea.* Rhine, *German-ocean.* Rhone, Ebro, Nile, *Mediterranean.* Tigris, Euphrates, *Persian-gulf.* Ganges, bay of *Bengal.* Missisippi, bay of *Mexico.*

A more particular Account

of the several countries of Europe may be exhibited, so as to give a precise idea of the situation of each sub-division, after the manner of the following specimen: in which (beside what was proposed in general, note 1.) such as are contiguous *Southward,* are *joind;* as in weLa-: such as are contiguous *Westward,* are *hyphend;* as in Che-De- &c.

ENGLAND.

Its Forty Counties.

Nor cum-dúr: weLa-yórk: che-de-not-linc: shróp-sta-le-rut norf:
Hér-wo-wa-nórtha: Bed-hunt-cámb-suff: mon-gl-óxfo-buck-hert-ess.
Som--wilt-berk--middlesex: corn--dev--dors--hámp-surrey-kentSuss.

FIRST MERIDIANS.

On either side of Teneriffe.

(Eást) London-*as* (West) Fer-*d*. Jag-*e* Nicol-*of*. *Córvo-boi*. Bras-*bou*.

Abbreviatures.

Ferro. St. Jago. St. Nicholas, coast of Brasil.

The Dutch placed the first Meridian at Teneriffe; the French, since 1634, at Ferro, two degrees west of Teneriffe: others variously, as in the memorial verse. In most of the French maps and those copied from them two degrees must be allow'd on such as are calculated on the Dutch plan to make them correspond; as for example—Hamburgh is there said to be *long.* 29 deg. 20 m. E. consequently in the French maps it will be found in 31 deg. 20 m. and in similar manner are all the rest. Many modern geographers usually now calculate the first Meridian from the capital city of the state in which each resides: the English reckon from the Royal Observatory at Greenwich near London; the North Americans from Philadelphia, situated 75 deg. 8 m. W. from London; and several of the French from Paris 2 deg. 20 m. E. of London.

History.

BIBLE.

The several Books of it, with the Time of their writing.

OLD TESTAMENT.

Its 39 Books.

Elÿh-jŏb; *ápty* [1]. Mo-pent: *bog*. Jósh: *boly*. Sám-ju-ki: *bazy*.
Dáv: *byly*. Sal-pro-can ecc: *ath*. Mórd-e: *toz*. E'z-chr: *ety* Neh: *eg*.

Prophets.

Jón: *kse*. Jo: *eig*. Am: *peíp*. Hose; *oieil*. Is: *pŭuy* Nah: *puk*.
Mic; *put*. Jér: *sta*. Zeph: *áutz*. Haba: *syn*. Ezĕ: *loul*. Obadi-*lkoi*.
Dániel: *ull*. Hag: *léz*. Zechari: *udz*. Málachi; *touoi*.

NEW TESTAMENT.

Its 27 Books.

Matt-*fa.*[2] Mar-*ot,* Thes-*lét.* Pe-*lo.* Gal Cor
Róma-*loi,* Luke-sa.
Phíl Col Ephês Phile Jáme-*se,* Heb Act-*si,* Tímothy
Tít-*su.*
Tim Peter-*aup* Jude-*pá.* Revel-*ous.* John-*not.*—
[3] *doi* in *iau.*

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[1] i. e. *Elih*u is most probably supposed to be the author of the book of *job,* about 1730 years before the birth of Christ. So, *Mos*es, the author of the *pen*tateuch, flourished in the year before Christ 1400. And so of the rest.—— N. B. *Ez*ra is thought by the jewish doctors to have writ the *ch*ronicles [the 36th chapter of Genesis, the last of Joshua and Jeremiah; and to have revised and settled the cannon of the old testament.]

[2] i. e. *Matt*hew writ his gospel about the year of our Lord 41. And so of the rest.

[3] i. e. 27 books (from the year 41 to 97) in 36 years.

ENGLAND.

Its Kings, since the Conquest, with the Commencement of their Reigns.

WILL Conq-*sau,*[1] Ruf-*koi.* HEN 1st-*ag.* STEPH-*bil.*
HE sec-*buf.*
RICH 1st-*bein.* JOHN-*ann* HEN 3d-*das.* EDWARD
1st-*doid.*
Ed 2d-*typ,* 3d-*tép.* RI sec-*ipp.* HEN 4th-*toun,*
5th *fat.*
6th-*fed* Ed 4th-*faub,* 5th, RI 3d-*feit.* HE 7th-*feil,*
8th *lyn.*
ED 6th-*lóp.* MARY-*lat.* ELS-*luk.* JAME 1st-*syt.* Că
1st-*sel.*
CAR 2d-*són.* JAME se-*séil.* WILL MA-*sein.* ANN-
pyd. Geo.-paf, pep.

1 i. e. *Will*iam the *conq*ueror began his reign (accounting the year to begin january 1) A. D. 1066——N. B. 1000 is omitted throughout this list.

MONARCHIES.

The grand or universal ones, their Rise, Fall, and Continuance.

ASS: Nĭn(A.M)-*ăpók*. Sar-*tetú* (BAB-*ifan*, PERS-*táuboi*, GREC-*isel* ÷
Cáss-ma-gre. Lys thrac-he-bós. Ptolem aé-lib-a-pál-sy. Seleuc as.)
BOM: Jul-*iny'd*, Jov-*otat* ÷ East, W̄ést: taken Cón-*loze*, Rom-*otun*:
A'lar(A.D)-*obz*, Attĭ-*flă*. Gêns-*ful*. Od-*ops*. Theód-*oni*. Tot-*lop*.

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i. e. The———Assyrian monarchy begun in *Nin*us (A. M.) 1748, and ended with As*sar*addinus in 3235; being swallowd up by the BABylonian, which ended (with Nabonadius) in 3419, (when Cyrus reignd over all Asia) so the kingdom was translated to the PERsians: from whom (by the conquest of Darius Codomannus) in 3617, Alexander translated it to the GREcians: after whose death, in 3625, it was (÷) divided (after the confusion of a few years) among four of his followers. *Cass*ander had *ma*cedon and *gre*ce: *Lysi*machus had *thrace*, with those parts of Asia that border on the *he*llespont and the *bos*phorus: *Ptolemy* had *æ*gypt, *lib*ya, *a*rabia, *pal*estine, and cœlo*sy*ria: *Seleucus*, all the rest of *as*ia. The———ROMan monarchy begun with *Jul*ius Caésar, in 3902; and ended in Jovian in 4313: after whose death it was (÷) divided into the *East*ern, and *West*ern empires: the former of which ended by the taking of *Con*stantinople (under Constantine Palæologus) in 5402; the latter by the taking of *Rom*e (under Honorius) in 4350; A. D. 410: by *Ala*ric, king of the Goths: after whom it was overrun and ravagd by *Atti*la, king of the Huns, in 451; by *Gen*seric, the Vandal, in 455; by *Od*oacer, king of the Heruli, in 476; by *Theod*oric, king of the Ostrogoths, in ÷493; by Tatilas, the Ostrogoth, in 547.

WAR.

Bodies of Soldiers.

R] Déc-*by*. Cen-*ázy*. Man-*eg*. Turm-*ig*. Cohor-*áug*. • Legi-*auth*. Ph-*eith*.
E] Comp-*uz,ag*. Squad-*ag,eg*. Ba-*lg,eig*. Brigad. *áth,bag*. Reg-*ig,auth*.

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1. The ROMAN *Legion* consisted of (at a medium) 6000 men: though the number was different, at different times, from 3000 to 6666. And, in proportion, the other bodies, viz. *Decuria*, 10. *Centuria*, 100. *Manipulus*, 200. *Turma*, 300. *Cohors*, 600. *Phalanx*, 8000.

2. An ENGLISH *Regiment* is from 300 to 1000 men. And, in proportion, the other bodies, viz. *Company*, 50-100. *Squadron*, 100-200. *Battalion*, 500-800. *Brigade*, 1000-1100.

Natural Philosophy.

PHYSICS.

ANNUITIES.

The Value, for several Ages of Life.

A-*bz,dei*[1]. Az-*bĭ,fo*. Ez-*bĕ,pei*. Iz-*bă,pe*. Oz-*ăz,ăp*. Ol-*n,oub*.
Uz-*ou,eb*. U-*k,ub*. Auz-*oi,sy*. Aul-*ău,lo*. Oiz-*l,id*.

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[1] i. e. for (A) 1 year of age, the value of an annuity is (*bz,dei*) 10,28 years purchase. And so of the rest. V. Halley, ap. Lowthorp, vol. 3. p. 669.

ARKS.

Of Noah, and of the Covenant Testimony, their Dimensions in Cubits.

(Cov) L-*e,re*. Br-*á,re*. D-*a,ré*. (NOAH) L-ig. Br-ux. D-*íz*; for Birds-*eg*, Qu-*ag*.

i.e. The *Ark*——of the COVENANT was a sort of Chest in *Length*, *Breadth*, *Depth*, 2½ : 1½ : 1½.——of NOAH was a sort of Ship, 300 : 50 : 30 : sufficient to hold (with food, &c.) all kinds of *Birds* (viz.) 200 ; *Quadrupeds*, 100. V. Gen. 6. 15. Exod. 25. 10.

ATMOSPHERE.

Its Height, Weight, Elasticity, &c.

Atmosphere (HIGH miles-*óz* [1]) on a foot-square présses *esauz* pounds ;
On 15 feét (for a man) tuns-*al* : when leást, tun-*a,re* less [2] ;
WEIGHING as 1——to (water) *eig*——to mercury) *azth eig* [3].
CÓMPREST, on Eárth, to *atpaun* [4] ; by Art, 60 tímes more, to *kesboz*.

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[1] As appears by a calculation, made by M. de la Hire, from the crepuscula.

[2] As appears by calculations made from the Torricellian experiments. V. Jurin, ap Varen. 1. 6. 19. 7.

[3] i. e. The weight of air compard to that of water, is as 1 to 800, &c. V. Hauksbee's exper.

[4] i. e. The common air we breathe, near the surface of the earth, is comprest, by the bare weight of the incumbent atmosphere, into a 13769th part of the space it would take-up, were it at liberty. V. Boyle, ap. Wallis. hydrost. 13 Philos. trans. n. 181.

DIVISIBILITY.

Of Matter, actually great.

By great EFFLUVIA, ín a long tíme, bodies lóse but a small weight [1].
Candle, an inch, convérted to LIGHT——gives párts a nonillion.[2]

[1] As is evident in perfumes, &c.

[2] At which rate there must fly out of it, as it burns, in the second of a minute, 418,660,000,000,000,000,000,000, 000,000,000,000,000,000,000 particles: vastly more than a 1000 times a 1000 millions the number of sands the whole earth can contain; reckoning 10 inches to 1 foot, and that 100 sands are equal to 1 inch. V. Nieuwent. rel. phil. vol. 2. p. 858.

DUCTILITY.

Of Bodies, very great.

Microscópical **Spiders** [1] spín at-a-tíme, at least, threads-*auth.*

Glass may be dráwn [2] as a web, and knít to the 4th ŏf a line space [3].

Gold, on Silver-wíre, is drawn [4] to the párt of an inch-*bom.*

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[1] i. e. Such are not visible but by a microscope.

[2] "As fine as a spider's web:" but not long enough to be woven.

[3] i. e. So, that the space in the middle of the knot shall not exceed one 4th of a line, or one 48th of an inch.

[4] "To the 14-millionth part of an inch, in thinness:" and yet is so perfect a cover to the silver, that there is not an aperture to admit alcohol of wine (the subtilest fluid in nature) nor even light itself. Reaumur.

EVAPORATION

From Water, its Quantity.

Foot-squăre, by̆ héat, in a day, *eváporates* hálf of a wine pint [1].

So, Medi tuns-*udky'm* [2]; near a thírd more than's bróught by the rivers [3].

---

[1] According to experiments made by Dr. Halley, ap. Miscell. curios. vol. 1. To which it may be added, that the *winds do sometimes* carry-off more than rises by heat,

[2] Estimating the *Medi*terranean at 40 degrees long, and 4 broad.

[3] V. Rivers. and, consequently, from the whole watery surface abundantly enough to furnish all the dews, rains, springs, rivers, &c. that are convey'd into the ocean.

MAN.

Life, Marriage, Parts, Perspiration.

LIVE, out of *ág,* but—at *Aú, so* [1]—at *As,fy*—ăt
Es, bŭ—ăt *Is, bau*
&——at *Os,ăz*——ăt *Us,au*——&——at *Aus, ĭ*—
ăt *Ois,a.*
MARR. *a* in *ázf* [2]: bir-*f* [3] (to búr as *a,áu* to *a* [4])
máles-*bo* to fem *at* [5].
BONES-*eni.* MUSCLES-*len,* TEETH-*íd*——BLOOD
as *ag* to *aauy* [6].
Béats, in an hour, times-*óth:* and an óunce, at a
tíme, is discharged [7];
52 féet in a mínute; as sépt-*ag* to 1 ìn thĕ ex-
tremes [8].
PERSPIRE through póres (*belth*-whereof by óne
grain of sánd may be coverd)
5 părts ŏf 8 (ă day's fóód) from hours 5, after méals,
to the 12th, 3 [9].

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[1] i. e. Of the children born, out of 100, there are living, at 6 years of age, but 64. And so of the rest. V. Halley, ap. Lowthorp. vol. 3. p. 699.————N. B. On observations of this nature, drawn from the bills of mortality, is computed the value of *annuities* for different ages of life. V. Annuities.

[2] i. e. 1 in 104 *Marry.* King.

[3] i. e. Marriages, one with another, do each produce 4 births. Derham.

[4] i. e. *Births* to *Burials* are as 1, 6 to 1. Derham.

[5] i. e. *Males,* born, *to Females,* are as 14 to 13. Graunt.

[6] i. e. In a body, weighing 160 pound, 100 thereof are *Blood;* understanding thereby not only the fluid containd in the veins and arteries; but also that in the lymphæ-ducts, nerves, and the other vessels, secreted from it, and return'd into it. Keil.

7 i. e. 250 pounds in an hour, at the rate of the whole mass, in 24 minutes.

8 i. e. The blood is driven out of the heart into the great artery with a velocity, which would carry it 52 feet in a minute: a velocity to that of its motion in the remotest branches, as 100 septillions [7th period] to 1.

9 Within 5 hours after eating, there is perspird about 1 pound; from the 12th to the 16th scarce half-a-pound. Sanctorius.

RIVERS.

The Quantity of their Waters.

At Kĭngstŏn-bridge, THAMES (yards Broad-*ág*,
Deep-*i*) 2 mile an hour Runs[1]:
tuns-*ezm igth* in a day; rh e ti po ni do niest nieper
akdoim[2].

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1. In a day, 48 miles, 84,480 yards; which multiplied by (3 times 100, the profile of water at the bridge, viz.) 300 yards, gives 25,344,000 cubic yards of water, i. e. 20,300,000 tuns.

2 The most considerable rivers that fall into the MEDITERRANEAN sea, are the *Rhone*, *Ebro*, *Tiber*, *Po*, *Danube*, *Nile*, *Don*, *Niester*, *Nieper*. Each of these is supposed to carry-down 10 times as much water as the Thames (not that any of them is so great; but so to allow for the other lesser rivers that fall into that sea). Now the water of the Thames being computed, as above, at about 20,300,000 tuns; the *3* rivers aforesaid will amount, each, to 203,000,000; in all, 1,827,000,000 tuns. V. Evaporation.

Solomon Lowe was a schoolmaster at Hammersmith, and author of the following works.—I. The Protestant Family Piece, or, a picture of Popery, 8°. 1716.—II. ΚΟΙΝΑ ΚΑΙΝΩΣ: an appendix to Grammar, containing Rhetoric and Prosody, with directions for Composing, Construing, Parsing, Writing elegantly, and gaining a Copia of Thoughts and Words. To which are added, very short, plain, and comprehensive rudiments of the French and Greek Tongues, 8°. 1719.—III. A Specimen of a Latin Grammar, 8°. 1722.—IV. A Grammar of the Latin Tongue, with appendix and notes, 8°. 1724.—V. Italian Rudiments, 8°. 1728.—VI. Latin Rudiments, 8°. 1729.—VII. The Occasional Critique; containing, (1.) On the Dean of Rochester's Latin Grammar. (2.) On Dr. Busby's Latin Grammar, as improved by his successors. (3.) On Education, etc. (4.) A Proposal of a new scheme of Grammar, 8°. 1736*—VIII. English Grammar reformed, 8°. 1737.—IX. Rhetoric delineated, 8°. 1737.

Of the following publications we have not been enabled to ascertain the dates.—I. An easy method of initiating Children in the Latin

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* These tracts were published separately under different titles and afterwards reprinted with the title of the *Occasional Critique*. No. 4, the last, was entitled The Whetstone, etc. and published in 1732.

Tongue, 8°.—II. A New System of English Examples to Latin Syntax, 8°.—III. A Vocabulary Latin and English.—IV. *Sententiæ pueriles,* Latin and English.—V. English Examples to Latin Syntax.—VI. A Construing Book and Supplement.—VII. Greek Characters and Abbreviations, in a Table.

67. *Dan. Geo. Morhofii Polyhistor Literarius Philosophicus et Practicus, cum accessionibus virorum clarissimorum Joh. Frickii et Joh. Molleri Flensburg.* [*Edit. Quart.*] 2 *tom.* 4°. *Lubecæ,* 1747.

In this work there are two ingenious dissertations, 1. *De Arte Lulliana similibusque inventis.* 2. *De Memoriæ subsidiis.* To these we confess some obligations; although Morhof, from unavoidable circumstances, was not consulted till most of the collections were made for this account of the Systems of Artificial Memory.

Daniel George Morhof, was born at Wismar, in the Dutchy of Mecklenburgh, in the Year 1639. He studied at Stettin and Rostock, and visited Holland and Oxford; and in 1665, was invited by the Duke of Holstein to become Professor of Poetry, Eloquence, and History, and Librarian in the University of Kiel. He

INSTANCES

OF THE

EXTRAORDINARY POWERS

OF

Natural Memory.

CHRONOLOGICALLY ARRANGED.

B. C.
115. HORTENSIUS, the celebrated Roman Orator, and contemporary of Cicero, was aided by uncommon powers of memory. He was able to repeat a whole oration in the words he had previously conceived it, without committing it to writing; and to go through all the arguments of an opponent in their proper order. As a proof of the degree in which he possessed this faculty, it is said that he once attended a whole day at a public sale, and at the end of it, recited, in regular order, the names of all the buyers, the articles sold, and their prices, with perfect exactness.

65. A. D.—**Seneca.** "Age (says Seneca) has done me many injuries, and deprived me of many things I once had: it hath dulled the sight of my eyes, blunted the sense of my hearing, and slackened my nerves. Amongst the rest I have mentioned before is the memory, a thing that is the most tender and frail of all parts of the soul, and which is first sensible to the assaults of age: that heretofore this did so flourish in me, as not only served me for use, but might even pass for a miracle I cannot deny; for I could repeat two thousand names in the same order as they were spoken, and when as many as were scholars to my master, brought each of them several verses to him, so that the number of them amounted to more than two hundred, beginning at the last, I could recite them orderly unto the first: nor was my memory only apt to receive such things as I would commit to it, but was also a faithful preserver of all that I had entrusted it with."

980. A. D.—**Avicenna,** or *Ebn-Sina,* an Arabian philosopher and physician, was born at Arsena, near Bocchara, and possessed a ready genius, and a wonderful memory. At the age of *ten* he made great progress in the languages, and could repeat the Koran by heart. He read over the books of Aristotle's Metaphysics forty times; and by this means so fixed them in his

memory, that he could repeat them with facility.

1484. A.D.—**JOSEPH SCALIGER.** The works of Homer, (says Wanley) are his Iliads and Odysseys, the former consist of twenty-four books, and so also the latter. His Iliads have in it thirty-one thousand six hundred and seventy verses, and I suppose his Odysseys have no less; and yet it is said of Joseph Scaliger, that in one-and-twenty days he committed all Homer to his memory.

1522. A. D.—**BISHOP JEWEL** had naturally a very strong memory, which he greatly improved by art; so that he could readily repeat any thing that he had written after once reading it. His own sermons were chiefly extempore from heads which he had penned down, and on which he used to meditate while the bell was ringing to summon the congregation to church. He is said to have taught his method of artificial memory to his old tutor, *Dr. Parkhurst,* while they were at Zurich; who in the space of 28 days, with only one hour's application on each day, learned all the 28 chapters of St. Matthew's Gospel so perfectly, that he could readily repeat the whole, or any particular verse, knowing at the same time what went before, or what followed after, any verse that was mentioned to him.

So firm was the memory of Bishop Jewel

that he used to say, if he were to deliver a premeditated speech before a thousand auditors, shouting or fighting all the while, they would not put him out. John Hooper, Bishop of Gloucester, who was burnt in the reign of Queen Mary, once, to try him, wrote about forty Welsh and Irish words. Mr. Jewel going a little while aside and recollecting them in his memory, and reading them twice or thrice over, said them by heart, backward and forward, exactly in the same order in which they were set down. And, at another time, he did the same by ten lines of Erasmus' paraphrase in English; the words of which being read sometimes confusedly without order, and sometimes in order by the Lord Keeper Bacon, Mr. Jewel thinking awhile on them, presently repeated them again.

1547. A. D.—**Lipsius**, an eminent philosopher and critic, born at Isch, near Brussels, was remarkable for the extent of his memory. He remembered the whole history of Tacitus, and pledged himself to recite *word for word*, any passage that might be required. So confident was he of having this book fixed in his memory, that he allowed a person to stand by him with a dagger, and to plunge it into his body if he did not repeat, faithfully, the words of the author.

1585. A. D.—**Muret** in his *Variæ Lectiones* has the following anecdote. In Padua, near unto me, dwelt a young man of Corsica, of good birth, and sent thither to study the civil law; in the study of which he had spent some years with that diligence and attention, that there was now raised amongst us a great opinion of his learning. He came almost every day to my house, and there went a report, that he attained to an art of memory, by assistance of which he was able to perform that which another could not believe unless he beheld it; when I heard this, I had a desire to behold these wonderful things, as one not very credulous of such matters as come by hearsay. I therefore desired him to give me some such kind of instance of his art as he should think fit. He told me he would do it when I pleased. " Immediately, then," said I; and when he refused not, all we who were present went into the next room; there did I dictate Latin, Greek, and barbarous names, some significant, others not; so many, and so different, having not the least dependance one upon the other, that I was weary with dictating, and the boy with writing what I dictated, and all the rest with hearing, and expectation of the issue. When we were thus diversely wearied, he alone called for more. But I myself said it was fit to observe some measure: and that I should be abundantly satisfied if he could but recite me the one half of those I had caused already to be set down. He fixing his eyes upon the ground (with great expectation on our part,) after a short pause began to speak. In brief, to our amazement, he repeated all we had written in the very same order they were set down, without scarce a stop or any hesitation: and then beginning at the last, recited them all backwards to the first; then so as that he would name only the first, third, fifth, and in that order repeat all; and indeed in what order we pleased, without the least error. Afterwards, when I was more familiar with him (having often tried him, and yet never found him speaking otherwise than the truth,) he told me once, and certainly he was no boaster, that he could repeat in that manner thirty-six thousand names, and which was yet the most strange, things stuck in his memory, that he would say, with little trouble, he could repeat any thing he had entrusted within a year after. For my own part, I made trial of him after many days, and found he said true. He taught Franciscus Molinus, a young patrician of Venice, and who had but a weak memory, in the compass of but seven days, wherein he had learned of him to repeat five hundred names with ease, and in what order he pleased.

1649. A. D.—FAMIANUS STRADA, in his first book of academical prolusions, speaking of Franciscus Suarez, says, " he hath so strong a memory, that he hath St. Augustine (the most copious and various of the fathers) ready by heart, alleging every where, as occasion presents itself, fully and faithfully his sentences, and, which is very strange, his words; nay, if he be demanded any thing touching any passage in any of his volumes (which of themselves are almost enough to fill a library,) I myself have seen him instantly showing and pointing with his finger to the place and page in which he disputed of that matter.

1661. A. D.—DR. THOMAS FULLER, the author of the Worthies of England, had so great a memory, (says Wanley) that he could name in order all the signs on both sides the way from the beginning of Pater-noster-Row at Ave-Maria-Lane, to the bottom of Cheapside to Stocks-Market.* And that he could dictate to five several writers at the same time, on as many different subjects. This gentleman making a visit to a committee of sequestrators sitting at Waltham in Essex, they soon fell into a discourse and commendation of his great memory;

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* The site of Stock-Market is now occupied by the *Mansion-House*, and many other adjacent buildings. The celebrated *Heidegger*, it is said, could name all the signs from the Exchange to St. James's, on one side the street, after walking once to observe them.

to which Mr. Fuller replied, "'Tis true, gentlemen, that fame has given me the report of a memorist, and if you please I will give you an experiment of it." They all accepted the motion, and told him they should look upon it as an obligation, laid aside the business before them, and prayed him to begin. "Gentlemen, (says he) I will give you an instance of my good memory in that particular. Your worships have thought fit to sequester an honest poor but cavalier parson, my neighbour, from his living, and committed him to prison; he has a great charge of children, and his circumstances are but indifferent, if you please to release him out of prison, and restore him to his living, I will never forget the kindness while I live." 'Tis said the jest had such an influence upon the committee, that they immediately released and restored the poor clergyman.

1676. A. D.—HUMPHREY BURTON, of Coventry, at the age of eighty-three, could (says Wanley) by the strength and firmness of his memory, give the sum of any chapter in the New Testament, and of the chapters in divers books of the Old Testament, in a Latin distich, with as much readiness, and as little hesitation, as if he had directly read them out of a book. I myself have frequently put him to the trial; wherein, though I have observed no order, but named ere a chapter at the beginning, then one towards the end, then again returned to the middle, and so on purpose prevented any assistance he might have from an orderly succession and dependance; yet could I no sooner name the chapter and book whereof I desired the account, but he was ready with his distich.

1684. A. D.—Dr. Wallis. In the *Philosophical Transactions* for the years 1686-7,[*] Dr. Wallis gives an account of his performing arithmetical operations in great numbers, by night in the dark; and conceives that we can use our memory with greater advantage at this time, than we can by day, when our thoughts are diverted by sights and noises. "Having had the curiosity (says Dr. Wallis) heretofore to try, how the strength of memory would suffice me, to perform some arithmetical operations (as *Multiplication, Division, Extraction of Roots,* etc.) without the assistance of pen and ink, or ought equivalent thereunto; and finding it to succeed well (for instance) in extracting the square *Root* from numbers of 8, 10, 12, or more places: I proceeded to try it (with success) in numbers of 20, 30, 40 places. But was not curious to keep memorials of the particular numbers which I had so considered, (as being but a curiosity, and not of farther use,) till there happened an occasional discourse of it with a forraigner (*Johannes Georgius Pelshover, Regio-Montanus Borussus)* who coming to see the *University* was pleased, as divers other forraigners often do) to give me a visit: Feb. 18, $16\frac{70}{71}$ at a time when I was afflicted with a tedious and severe quartan ague, (which held me for a whole year from about Michaelmas then last past, till about the same time in the year following;) which caused me to pass my nights with little or no sleep.

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[*] Vol. xv. p. 1269.

"He was desirous I would tell him some of those numbers which I had so considered. Which at the present, for the reason but now mentioned) I could not do; save only that, on Dec. 22, 1669, I had (by night in the dark) extracted the square root of 3 (with ciphers adjoined) contained to the twentieth place of decimal fractions: finding it to be:

1. 73205,08075,68877,29353, *fere*.

Which is the square root of 3, with forty ciphers adjoined;

3,00000. 00000. 00000. 00000. 00000. 00000.,00000. 00000.

(which I had chanced to write down, because $\sqrt{3}$ is a surd which I might after have occasion to make use of) but added, that I could at pleasure perform the like at any time."

1714. A. D.—ANTONIO MAGLIABECHI was born at Florence, Oct. 29, 1633. Such was the poverty of his parents, that they thought themselves happy in getting him into the service of a man who sold herbs and fruit. Here he took every opportunity, though he could not tell one letter from another, to pore on the leaves of some old books that served for waste paper, declaring that he loved it of all things. A neighbouring bookseller, who observed this, took him into his service. Young Magliabechi soon learned to read; and his inclination for reading became his ruling passion; and a prodigious memory his distinguished talent. He read every book that came into his hands, and retained not only the sense of what he read, but often all the words, and the very manner of spelling, if singular. To make trial of the force of his memory, a gentleman lent him a manuscript he was going to print. Some time after it was returned, the gentleman came to him, with a melancholy face, and pretended it was lost. Magliabechi being requested to recollect what he remembered of it, *wrote the whole without missing a word, or varying the spelling*. He was consulted by all the learned who proposed to write on any subject. If a priest, for instance, was going to compose a panegyric on a saint, Magliabechi would tell him every author, to the number of an hundred sometimes, who had said any thing of that saint, naming the book and the page, and the very words. He did this so often, and so readily, that he came at last to be looked upon as an oracle; and Cosmo III. Grand Duke of Florence, made him his librarian, the most suitable office to Magliabechi's genius. In the latter part of his life, when a book came into his hands, he would read the title-page all over, dip here and there in the preface, dedication, and prefatory advertisements, if there were any; and then cast his eyes on each of the divisions, sections, or chapters. After this, he could tell at any time what the book contained.

" Though Magliabechi must have lived a very sedentary life, yet he attained to the age of 81. He died July 14, 1714, in the midst of the public applause, after enjoying, during all the latter part of his life, such an affluence as very few persons have ever procured by their knowledge or learning. By his will he left a very fine library collected by himself, for the use of the public, with a fund to maintain it; and the overplus of the fund to the poor. It had been usual for every author and printer to make him a present of a copy of every thing they published.

" Though he was not an ecclesiastic, he would never marry. He was quite slovenly in his dress. He received his friends, and those who came to consult him on any points of literature, in a civil and obliging manner; though in general he had almost the air of a savage, and even affected it; together with a cynical or contemptuous smile. In his manner of living, he affected the character of Diogenes: three hard eggs, and a draught or two of water, were his usual repast. When any one went to see him, they most usually found him lolling in a sort of fixt wooden cradle in the middle of his study, with a multitude of books, some thrown in heaps, and others scattered about the floor, all around him; and this his cradle or bed, was attached to the nearest pile of books by a number of cobwebs. At their entrance he commonly used to call out to them, 'Not to hurt his spiders.'*"

1748. A. D.—WILLIAM LYON. In the *Gentleman's Magazine* for the year 1752,† there is the following singular anecdote. "*William Lyon*, a strolling player, who performed at the theatre at Edinburgh, and who was excellent in the part of *Gibby, the Highlander*, gave a surprising instance of memory. One evening, over his bottle, he wager'd a crown bowl of punch, (a liquor of which he was very fond,) that next morning at the rehearsal, he would repeat a *Daily Advertiser* from beginning to end. At the rehearsal, his opponent reminded him of the wager, imagining as he was drunk the night before, that he must certainly have forgot it, and rallied him on his ridiculous bragging of his memory. *Lyon* pulled out the paper, desired him to look at it, and be judge himself whether he did or did not win his wager. Notwithstanding the unconnected matter of the paragraphs—the variety of advertisements—and the general choas which goes to the composition of a newspaper, he repeated it from beginning to end, without the least hesitation or mistake. *Lyon* died about four years ago at *Edinburgh,* where he had played with great success."*

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* Spence's Parallel of Hill and Magliabechi.

† Vol. xxii. p. 411.

1751. A. D.—JEDEDIAH BUXTON. A correspondent in the *Gentleman's Magazine* for February 1751,† gives the following account of this extraordinary man. "It is necessary to premise first that he is no scholar, not being able to scrawl his own name; and secondly that his attainments are of his own pure industry, for that he never had further help towards them, than his learning the multiplication table in his youth; yet without the assistance of pen, ink, or chalk, or any other mark, he will multiply 5 or 6 figures by as many, or divide as large sums off hand, in a very short time, sooner than the most concise of your arithmeticians pretend to.

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* "We have heard of this performance (says the editor) many years since, when the *Daily Advertiser,* though larger than other papers, was not so large and crowded as it has been of late."

† Vol. xxi. p. 61.

"I met with him by accident last summer, and after hearing of his performances, I first proposed to him the following random question: In a body whose 3 sides are 23145789 yards, 5641732 yards, and 54965 yards, how many cubical ⅛ths of an inch? After once naming the several figures distinctly one after another, in order to assure himself of the several dimensions and fix them in his mind, without more ado he fell to work amidst more than a 100 of his fellow labourers, and after leaving him about 5 hours, on some necessary concerns (in which time I calculated it with the pen) at my return, he told me he was ready: Upon which taking out my pocket-book and pencil, to note down his answer, he asked me which end I would begin at, for he would direct me either way. I chose the regular method, and to my great surprize, found that in a line of 28 figures, he made no hesitation nor the least mistake. Many such questions did several other people give him, which he never failed to answer truly; yea he often corrected those who wrought with the pen. What is more astonishing than this, he would suffer two people to propose different questions, one immediately after the other, and give each their respective answers, without the least confusion. So retentive is his memory, that he will repeat his answers a month or two afterwards if you ask him.

" He will stride over a piece of land or a field, and tell you the contents of it almost as exact as if you measured it by the chain. Some years ago he measured in this manner the whole lordship of *Elmton,* of some thousand acres, belonging to Sir *John Rhodes,* and brought him the contents, not only in acres, roods, and perches, but even in square inches; after this, for his own amusement, he reduced them into square hairs-breadths, computing (I think) 48 to each side of the inch, which produced such an incomprehensible number, that instead of entertaining the mind with any sort of pleasure, serves more to amaze and distract it.

" Millions, millions upon millions, tribes, cramps, and so on, (for in this manner he enumerates his long series of numbers) are as plain and familiar to him, as pounds, shillings, and pence; I may say more familiar, for he has seldom more than a week's wages before hand. It was but the other day, he set himself a voluntary question, to calculate how much one farthing doubled 140 times would amount to. This he desired me to set down in 39 places of pounds, and an odd 2*s.* 8*d.* When I asked him if he could multiply this immense sum into itself, he said he would undertake it, and the odd fraction likewise if I pleased; but I dismissed him with the whole numbers, and shall not be more amazed at his bringing a true answer, than I have been already at his surprising performances, some of which have cost him many days study; but be the work long or short it is all one to him, because he reassumes the operation in the morning at the same place he left it over night, and so continues till he has finished it. If at any time you find an error in his answer, he will *overhaul*, as he terms it, and find out his mistake himself, rather than be convicted by your pen."

Another correspondent in the same Magazine for August 1751,* affords some farther information concerning Buxton. He says, "I perceive he has a good notion of the square, oblong, triangle, and circle. The first question I proposed was as follows: admit a field 423 yards long, and 383 wide, what was the area? After I had read the figures to him distinctly, he gave me the true product, *viz.* 162009 yards, in two minutes, for I observed by my watch how long every operation took him. I then asked him how many acres the aforesaid field measured? In 11 minutes he told me 33 acres, 1 rood, 35 perches, 20 yards, and a quarter just. I then proposed to him, how many barley corns would reach 8 miles? In a minute and half he answered 1520640 barley corns. He is the slowest in finding the area of a circle, but yet he finds it very near the truth, though he don't use the mathematical rules. Allowing the distance between *York* and *London* to be 204 miles, I asked him how many times a coach-wheel turned round in that distance, allowing the wheel's circumference to be six yards? In 13 minutes he answered 59840 times. The next proposition was, a tub or bin 346 inches long, 256 inches wide, 94 inches deep, how many gallons liquid measure and what corn will it hold? Answer, 3,454,464 solid inches, or 1,763,685,568 half quarters of solid inches, making 12,249,872 gallons liquid measure, or 12249 gallons, 3 quarts, and 34½ inches; or it will hold 191 quarters, 3 bushels, 3 quarterns, a half quartern, and 34½ inches remainder.

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* Vol. xxi. p. 347.

"Again, suppose a canal was to be dug 42 feet long, 263 wide, and 2 feet deep, how many cubical yards of earth to be removed? After pausing a quarter of an hour he answered, 10373 yards 24 feet. He will talk with you freely whilst he is doing his questions, it being no molestation or hindrance to him, but enough to confound a penman. His memory is so great, that he can leave off and reassume the operation again, at a week, month, or at several months end; he calls his figures all by their proper names, and is very ready at naming them either backwards or forwards. From *May*, 17, 10 h. A. D. 1725, he told me he was drunk (to make use of his expression) with reckoning by his memory till *June* 16, following, and then slept soundly seven hours, but will never attempt so much reckoning again, for fear of falling into the same dilemma. I suppose what he means by his being drunk, was his being so much stupified with thought, as rendered him incapable of business; when it may well be said *neque pes, neque mens satis suum officium facit.*

"But, to proceed further with this uncommon man, I was led by curiosity to know what question it was that caused his drunkenness; to which he replied, in answering the following question. In 202,680,000,360 miles, and each mile reckoned to be cubical, how many barley-corns, vetches, peas, wheat, oats, rye, beans, lintels, and how many hairs, each an inch long, would fill that space, reckoning 48 hairs in breadth to an inch on the flat, as he found them to be so. I shall here subjoin his table of measures, which he founded on experiment.

200	Barley corns	are contained in one solid inch.
300	Wheat corns	
512	Rye corns	
180	Oats	
40	Peas	
25	Beans	
80	Vetches	
100	Lintels	
2304	Hairs 1 inch long	

From which he calculated the following result: 14 thousand, 93 mill. 420 thous. 936 quarters, 1 bushel, 1 peck, 1 quartern, 3 pints, and 5 and a quarter solid inches of one sort of grain, are contained in one solid mile; or 5 thousand, 451 mill. 776 thousand yards in a cubical mile, being 254 millions of millions, 358 thousand, 61 mill. and 56 thousand inches in a cubical mile; and if every hair be an inch long, and 2304 hairs a cubical inch, then 586 thousand, 40 millions of millions, 972 thousand, 673 millions, and 24 thousand, will fill the space of a cubical mile: but if a hair be no longer than it is broad, he then found that there would be 28 tribes, 129 thousand, 966 millions of millions, 688 thousand, 305 millions, and 152 thousand hairs, to fill the space of a cubical mile.

" As we are come to that notation where he introduces the word tribe, it will be proper to set down that prolix number, arising from 140 nails, doubled at a farthing a nail, *viz.*

725,958,238,096,074,907,868,531,656,993,638,851,106*l.*2*s.*8*d.*

which he reads thus :

725 Tribes of tribes,
958 Thous. of mill. of mill. of tribes,
238 Millions of millions of tribes,
096 Thousand millions of tribes,
074 Millions of tribes,
907 Thousand tribes,
868 Tribes,

531 Thousand millions of millions,
656 Millions of millions,
993 Thousand millions,
638 Millions,
851 Thousands,
106 Pounds, 2 shillings, and 8 pence.

For the truth of which I leave those gentlemen that have leisure and curiosity to try it.

"I shall only mention one thing more with respect to this man's memory, and it shall be in squaring the above number. Now you see he is to multiply 39 figures by 39 figures, and all by the strength of his memory, without having recourse to human assistance, or pen, ink, and paper. What a prodigious task must this be to be operated by the head only, which he certainly did and after two months and a half, he brings the following answer, omitting the odd 2s. 8*d.* which he reads thus:

527 Tribes of tribes of cramps,
015 Thous. mill. of mill. trib. of cramps,
363 Mill. of mill. tribes of cramps,
459 Thous. mill. tribes of cramps,
557 Mill. of tribes of cramps,
385 Thousand tribes of cramps,
673 Tribes of cramps,
733 Thous. mill. of mill. of cramps,
542 Million of millions of cramps,
638 Thousand millions of cramps,
591 Millions of cramps,
721 Thousand cramps,
213 Cramps.

298 Tribes of tribes,
966 Thous. mi. of mill. of tribes,
079 Millions of mill. of tribes,
307 Thousand millions of tribes,
524 Millions of tribes,
904 Thousand tribes,
381 Tribes,
389 Thousand millions of millions,
499 Million of millions,
251 Thousands of millions,
637 Millions,
423 Thousands,
236 Pounds.

Further particulars respecting *Jedediah*, of an interesting nature, are found in the *Gentleman's Magazine* for December, 1753.* This correspondent observes, "I accidently met him one afternoon last week, and was not much above two hours in his company. In the first half hour, several persons being present, some trifling things were started and talked of; but as he was very desirous that I should propose some higher questions to him, I complied, and the company were all witnesses of his prodigious readiness in answering the following questions.

"QUESTION I.

"In a field 351 yards long, and 261 yards wide, how many acres?

"After 11 minutes, he answered—18 acres, 3 roods, 28 perches, and 14 remained.

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* Vol. xxiii. p. 557.

" QUESTION II.

" Suppose sound moves 1142 feet in one second of time, how long then, after the firing of one of the cannons at Retford, may the same be heard at Haughton Park, taking the distance at five miles?

" After about a quarter of an hour he told me—in 23 seconds, 7 thirds, and 6 remained.

" QUESTION III.

" Admit I set 3584 brocoli plants in rows, 4 feet asunder, and the plants 7 feet apart, in a rectangular plot of ground, how much land will these plants take up?

" In near half an hour he said—2 acres, 1 rood, 8 perches and half.

" QUESTION IV.

" What dimensions must I give my joiner to make me a cubical corn bin, that shall hold me just a quarter of malt, Winchester measure?

" This question exercised all his faculties, and he declared it was the hardest he ever proposed; by this I perceived he had never engaged himself about the cube root: however, though so difficult it appeared to him, he was very desirous to answer it, before it was too late in the evening, and after some time, he said to himself *there were nooks in it, but he would sift them out:* he never regarded our talking, but sat as one heedless of every thing about him, except his pot of beer, which he took notice of. I gave him no hints, help, or assistance, but left it entirely to him, as I did the others, nor had he any thing in his hand to make any marks (which I must repeat, because he makes all his computations by his memory) after about an hour he told me, it would be a little more than 25¾ inches on a side, and 26 inches would be too much, all which is very true and very exact.

"I shall here subjoin an account he gave me of the quantity of *ale* or *strong beer* that he has drank on free cost, since he was 12 years of age, and the gentlemen's names where; and, as the account was a little particular, I asked him *huc and illuc* after I had committed it to paper, and he answered each demand as set down, at the houses of the following noblemen and gentlemen:

	Pints.		*Pints.*
Duke of Kingston	2130	Rev. Mr. Pegge	10
Duke of Norfolk	266	Mr. Richardson	7
Duke of Leeds	232	Mr. Raynes	30
Duke of Devonshire	10	Mr. Stevens	5
Lady Oxford	280	Mr. Far	1
G Heathcote, Esq.	160	Mr. Greenwood	77
Sir G. Savile, Bart.	20	Mr. Shaw	2
J. Thornhagh, Esq.	20	Mr. Barker	15
Sir L. Pilkington, Bart.	2	Mr. Sisson	12
John Bristowe, Esq.	92	Mr. Major	8
W. Villareal, Esq.	8	Mr. Brigs	3
Sir H. Hunlock, Bart.	2	Mr. Pilkington	2
—— Burton, Esq.	4	Mr. J. Brigs	4
—— White, Esq.	1	Mr. Beestings	45
Dr. Burne	5	Gathering for his dead cow	72
Mr. Hocks	251	Rev. Mr. Hewet	2
Mr. West	201	Col. Chadwick	3
Mr. Vesey	16	Mr. Halfhead	15
Rev. Mr. Hartshorn	19	Mr. Wright	40
Mr. Flint	317	At Elmton Manor	300
—— Clarke, Esq.	20	Mr. Sherwin	15
—— Hallows, Esq.	12	Mr. Carteret	16
Sir J. Jenkinson, Bart.	1	Mr. Lane	20
Mr. Hancock	54	Mr. Whitehouse	3
Mr. Hall	63	Mr. R. Parkin	40
Mr. E. Sharpe of Elkesly	5	Mr. R. Greenwood	64
Mr Th. Sharpe	16	Mr. Th. Clarke	40
Rev. Mr. Boawre	17	Mr. Bullivant	7
Mr. Willets	17	Mr. Padley	10
Mr. Mayor of Chesterfield	2	At my own house	10

"The whole amounts to 5116 pints, or winds, as he terms them, because he never uses above one wind to a pint, or two to a quart."

In the *Gentleman's Magazine* for June, 1754,* there is a portrait of *Jedediah,* in the forty-ninth year of his age, with this motto from Virgil, '*Numeros Memini.*'† The editor of this Magazine having received many communications questioning the authenticity of the circumstances already related of Buxton, gave repeated assurances of the certainty of the facts, and appealed to the known integrity of the gentlemen by whom they were communicated; and, as an additional testimony inserted a sketch of the life of this extraordinary man. "With this print* (says the editor) it was greatly to be wished

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* Vol. xiv. p. 251.

† In addition to this portrait there have been various others engraven at different times. (1.) A small etching, (æt. 57, 1764,) by Miss Hartley, 1764. (2.) A whole length—an etching in large 4o. by Holme. (3.) A ditto, in mezzot. J. Spilsbury. (4.) A ditto, an etching, 4o. by Topham, 1770. (*Bromley.*)

that some account of his life could be given: but the life of laborious poverty is necessarily uniform and obscure: the history of one day would almost include the events of all. Time, with respect to *Buxton*, changed nothing but his age, nor did the seasons vary his employment, except that in winter he used a *flail*, and in summer a *ling hook*.

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* The portrait of Jedediah from which the above wood-cut is taken.

"The grandfather of *Jedediah*, *John Buxton*, was vicar of *Elmeton*, in *Derbyshire*, and his father, *William Buxton*, was school-master of the same parish; but *Jedediah*, notwithstanding the profession of his father, is extremely illiterate, having by whatever accident, been so much neglected in his youth as never to have been taught to write: how he came first to know the relative proportion of numbers, and their progressive denominations, he does not remember; but to this he has applied the whole force of his mind, and upon this his attention is constantly fixed, so that he frequently takes no cognizance of external objects, and when he does it is only with respect to their numbers: the same attention of his mind appears as well by what he hears as by what he sees. If any space of time is mentioned, he will soon after say, that it is so many minutes, and if any distance of way, he will assign the number of hair's breadths, without any question having been asked, or any calculation expected by the company.

"By this method he has greatly increased the power of his memory, with respect to figures, and stored up several common products in his mind, to which he can have immediate recourse, as the number of minutes in a year, of hair's breadths in a mile, and many others. When he once comprehends a question, which is not without difficulty and time, he begins to work with amazing facility, and will leave a long question half wrought, and, at the end of several months, resume it, beginning where he left off, and proceeding regularly till it is completed.

" His memory would certainly have been equally retentive, with respect to other objects, if he had attended to other objects with equal diligence; but his perpetual application to figures has prevented the smallest acquisition of any other knowledge, and his mind seems to have retained fewer ideas than that of a boy of ten years old, in the same class of life. He has been sometimes asked, on his return from church, whether he remembered the text, or any part of the sermon, but it never appeared that he brought away one sentence: his mind, upon a closer examination, being found to have been busied, even during divine service in its favourite operation, either dividing some time or some space into the smallest known parts, or resolving some question that had been given him as a test of his abilities. His power of abstraction is so great that no noise interrupts him; and, if he is asked any question, he immediately replies, and returns again to his calculation, without any confusion, or the loss of more time than his answer required. His method of working is peculiar to himself, and by no means the shortest or the clearest, as will appear by the following example:

" He was required to multiply 456 by 378, which he had completed as soon as a person in company had produced the product in the common way: and upon being requested to work it audibly, that his method might be known, he multiplied 456 first by 5, which produced 2280, which he again multiplied by 20, and found the product 45600, which was the multiplicand multiplied by 100; this product he again multiplied by 3, which produced 136800, which was the sum of the multiplicand multiplied by 300; it remained therefore to multiply it by 78, which he effected, by multiplying 2280 (the product of the multiplicand multiplied by 5) by 15; 5 times 15 being 75; this product being 34200, he added to the 136800, which was the multiplicand multiplied by 300, and this produced 171000, which was 375 times 456; to complete this operation therefore, he multiplied 456 by 3, which produced 1368, and having added this number to 171000, he found the product of 456 multiplied by 378 to be 172368.

"Thus it appears that his arithmetic is perfectly his own, and that he is so little acquainted with the common rules as to multiply 456 first by 5, and the product by 20, to find what sum it would produce multiplied by 100, whereas if he had added two noughts to the figures, he would have obtained it at once.

"The only objects of *Jedediah's* curiosity, except figures, were the king and royal family, and his desire to see them was so strong, that, in the beginning of the spring, he walked to London on purpose, but at last returned disappointed, the king having just removed to Kensington as *Jedediah* came into London. He was however, introduced to the Royal Society, whom he called the *volk of the Siety Court*: the gentlemen who were present asked him several questions in arithmetic, to prove his abilities, and dismissed him with a handsome gratuity.

"During his residence in London he was carried to see King Richard III. performed at Drury-lane playhouse, and it was expected either that the novelty and the splendour of the show would have fixed him in astonishment, or kept his imagination in a continual hurry; or that his passions would, in some degree, have been *touched* by the power of action, if he had not perfectly understood the dialogue; but *Jedediah's* mind was employed in the playhouse just as it was employed at church. During the dance he fixed his attention upon the number of steps; he declared after a fine piece of music, that the innumerable sounds produced by the instruments had perplexed him beyond measure, and he attended even to Mr. Garrick only *to count the words that he uttered*, in which, he says, he perfectly succeeded.

"*Jedediah* is now safely returned to the place of his birth, where, if his enjoyments are few, his wishes do not seem to be more: he applies to his labour, by which he subsists with cheerfulness; he regrets nothing that he left behind him in London, and it is still his opinion, that a slice of rusty bacon affords the most delicious repast."*

1808. A. D.—Richard Porson. The most remarkable among the intellectual powers of Richard Porson was unquestionably that of memory. It was at once obvious to every one who had the good fortune to be in his company, and it never ceased to excite the admiration of those who had most frequently an opportunity of conversing with him. Every thing he had read (and what was there worthy, or, indeed, unworthy of literary notice, which he had not read?*) appeared to be present to his mind with uncommon precision. Whensoever a subject connected with English, Latin, or Greek poetry was started, he would recite some brilliant and striking passage at considerable length in the words of the author. And in the latter language more especially, which was his favourite study, he was so completely master, not only of the words of the author in question, but of every circumstance relating to the words, that he would expatiate upon the various readings, and the points of grammar and criticism connected with them, in such a manner, as to produce the effect of a complete and well-digested Variorum Commentary. We remember to have heard him relate one or two incidents which occurred at different, although both early, periods of his life, which will illustrate this quality of his mind far better than any laboured detail.

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* Jedediah died about the year 1774, aged 70, and left several children, none of whom have inherited the rare talents of their father.

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* It was one of the peculiar traits of his mind that it rejected no aliment. He was equally well read in Joe Miller, and the Fathers, as in Greek literature. And in the very lowest, as well as highest branches of human learning, his memory was equally retentive. In his power over figures, though he was at an early age diverted from mathematics, Mr. P. never knew his equal. His quickness in bringing out the result of a most intricate and manifold calculation by mental working was magical. He had formed for himself a species of short-hand in figures (if we may use the term) that had the most astonishing brevity and truth.

When he was very young, perhaps at the time when he was under the care of Mr. Summers, returning to his father's cottage, he lost his way, and found shelter in the house of a little farmer, whose son, somewhat older than Porson, had just quitted school. With this boy Porson was to sleep; but instead of betaking himself to his slumbers, he began questioning his companion concerning what he had learned at school. He found him a most admirable arithmetician; and passed the night in proposing questions, which the other answered to his satisfaction as well as surprise; for at last he found him capable of multiplying 9 figures by 9 in his head, an operation which was quite familiar to our young Professor.

When at Eton, as he was going to his tutor's, to construe an Horace lesson preparatory to the business of school, one of the senior boys took Porson's Horace from him, and thrust into his hands some English book. The tutor called upon Porson to construe, and the other boys were much amused in considering the figure he [illegible]ld make in this emergency. Porson, how[illegible]who had Horace by heart before he went to Eton, knowing where the lesson was to begin, began without hesitation,

> Mercuri facunde, nepos Atlantis:

and went on regularly, first reciting the Latin and then giving the Latin and English, as if he had really had the author before him. The tutor, perceiving some symptoms of astonishment as well as mirth amongst the other boys, suspected that there was something unusual in the affair, and inquired what edition of Horace Porson had in his hand. "I learned the lesson from the Delphin," replied his pupil, avoiding a direct answer. "That is very odd," replied the other, "for you seem to be reading in a different side of the page from myself. Let me see your book."—The truth was of course then discovered; but the master, instead of shewing any displeasure, wisely and kindly observed to the others, that he should be most happy to find any of them acquitting themselves as well in a similar predicament.

It should be remembered to the honour of the Professor, that he never appeared in any degree vain of this astonishing talent; and he once observed, "I never remembered any thing but what I transcribed three times, or read over six times at the least; and, if you will do the same, you will have as good a memory." Indeed he was at all times the warm advocate of a doctrine, which is as true as it is important in the conduct of education. He maintained that superiority of intellect and of attainments was not so much owing to a difference in the formation of the organs, as in the mode by which education was conducted. And although such a man as Porson could not have failed to have been distinguished for the strength and acuteness of his understanding, under any circumstances, yet it cannot be doubted that the habits of his earlier years contributed much to that force and precision in his memory, for which he was so eminently distinguished.

1811. A. D.—DR. LEYDEN, the lamented author of the 'Scenes of Infancy in Teviotdale,' and friend of Walter Scott, was remarkable for the tenacity of his memory. When he was at Mysore, an argument occurred upon a point of English history: it was agreed to refer it to Leyden, and, to the astonishment of all parties, he repeated verbatim *the whole of an Act of Parliament* in the reign of James I. relative to Ireland, which decided the point in dispute. On being asked how he came to charge his memory with such extraordinary matter, he said that several years before, when he was writing on the changes that had taken place in the English language, this Act was one of the documents to which he had referred as the specimen of the stile of that age, and that he had retained every word in his memory. Dr. Leyden fell a sacrifice to the climate of Java.

1812. A. D.—**Zerah Colburn.** The appearance of this young American, and rival of Jedediah Buxton, having excited considerable attention, we shall present our readers with the following interesting narrative, as drawn up by the ingenious and well known calculator, **Mr. Francis Baily.**

" *London, Aug.* 20, 1812.

" The attention of the philosophical world has been lately attracted by the most singular phænomenon in the history of the human mind that perhaps ever existed. It is the case of a child, *under eight years of age,* who, without any *previous* knowledge of the common rules of arithmetic, or even of the *use and power* of the Arabic numerals, and without having given any particular attention to the subject, possesses (as if by intuition) the singular faculty of solving a great variety of arithmetical questions *by the mere operation of the mind,* and without the usual assistance of any visible symbol or contrivance.

"The name of this child is Zerah Colburn, who was born at Cabut (a town lying at the head of Onion river, in Vermont, in the United States of America,) on the 1st of September 1804. About two years ago (August 1810) although at that time not *six years of age*, he *first* began to show those wonderful powers of calculation which have since so much attracted the attention and excited the astonishment of every person who has witnessed his extraordinary abilities. The discovery was made by accident. His father, who had not given him any other instruction than such as was to be obtained at a small school established in that unfrequented and remote part of the country, (and which did not include either *writing* or *ciphering*,) was much surprised one day to hear him repeating the products of several numbers. Struck with amazement at the circumstance, he proposed a variety of arithmetical questions to him, all of which the child solved with remarkable facility and correctness. The news of this infant prodigy soon circulated through the neighbourhood; and many persons came from distant parts to witness so singular a circumstance. The father, encouraged by the unanimous opinion of all who came to see him, was induced to undertake, with this child, the tour of the United States.

They were every where received with the most flattering expressions; and in the several towns which they visited, various plans were suggested to educate and bring up the child, free from all expense to his family. Yielding, however, to the pressing solicitations of his friends, and urged by the most respectable and powerful recommendations, as well as by a view to his son's more complete education, the father has brought the child to this country, where they arrived on the 12th of May last: and the inhabitants of this metropolis have for the last three months had an opportunity of seeing and examining this wonderful phænomenon,* and of verifying the reports that have been circulated respecting him.

" Many persons of the first eminence for their knowledge in mathematics, and well known for their philosophical inquiries, have made a point of seeing and conversing with his extraordinary powers. It is correctly true, as stated of him, that —' He will not only determine, with the greatest facility and dispatch, the exact number of *minutes* or *seconds* in any given period of time; but will also solve any other question of a similar kind. He will tell the exact *product* arising from the multiplication of any number, consisting of two, three, or four figures, by any other number consisting of the like number of figures. Or, any number, consisting of six, or seven places of figures, being proposed he will determine, with equal expedition and ease, *all* the *factors* of which it is composed. This singular faculty consequently extends not only to the *raising of powers*, but also to the extraction of the *square* and *cube roots* of the number proposed; and likewise to the means of determining whether it be a *prime* number (or a number incapable of division by any other number); for which case there does not exist, at present, any general rule among mathematicians.' All these, and a variety of other questions connected therewith, are answered by this child with such *promptness* and *accuracy* (and in the midst of his juvenile pursuits) as to astonish every person who has visited him.

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* At the Exhibition Rooms, Spring Gardens.

" At a meeting of his friends which was held for the purpose of concerting the best method of promoting the views of the father, this child undertook and completely succeeded in, raising the number 8 *progressively* up to the *sixteenth* power!!! and in naming the last result, viz. 281,474,976,710,656 he was right in every figure. He was then tried as to other numbers, consisting of one figure; all of which he raised (by actual multiplication and not by memory) as high as the *tenth* power, with so much facility and dispatch that the person appointed to take down the results, was obliged to enjoin him not to be so rapid! With respect to numbers consisting of two figures, he would raise some of them to the *sixth, seventh,* and *eighth,* power; but not always with equal facility: for the larger the products became, the more difficult he found it to proceed. He was asked the *square root* of 106929, and before the number could be written down, he *immediately* answered 327. He was then required to name the *cube root* of 268,336,125, and with equal facility and promptness he replied 645. Various other questions of a similar nature, respecting the roots and powers of very high numbers, were proposed by several of the gentlemen present, to all of which he answered in a similar manner. One of the party requested him to name the *factors* which produced the number 247483, which he immediately did by mentioning the two numbers 941 and 263; which indeed are the only two numbers that will produce it. Another of them proposed 171395, and he named the following factors as the only ones that would produce it; viz. 5 × 34279 7 × 24485, 59 × 2905, 83 × 2065, 35 × 4897, 295 × 581, and 413 × 415. He was then asked to give the factors of 36083; but he immediately replied that it had none, which in fact was the case, as 36083 is a prime number. Other numbers were indiscriminately proposed to him, and he always succeeded in giving the correct factors, except in the case of prime numbers, which he discovered almost as soon as proposed. One of the gentlemen asked him how many *minutes* there were in forty-eight years; and before the question could be written down he replied 25,228,800; and instantly added, that the number of *seconds* in the same period was 1,513,728,000. Various questions of the like kind were put to him; and to all of them he answered with nearly equal facility and promptitude; so as to astonish every one present, and to excite a desire that so extraordinary a faculty should (if possible) be rendered more extensive and useful.

"It was the wish of the gentlemen present to obtain a knowledge of the method by which the child was enabled to answer, with so much facility and correctness, the questions thus put to him: but to all their inquiries upon this subject (and he was closely examined upon this point) he was *unable* to give them any information. He positively declared (and every observation that was made seemed to justify the assertion) that he did not know *how* the answers came into his mind. In the act of multiplying two numbers together, and in the raising of powers, it was evident (not only from the motion of his lips, but also from some singular facts which will be hereafter mentioned,) that some *operation* was going forward in his mind; yet that operation could not (from the readiness with which the answers were furnished) be at all allied to the usual mode of proceeding with such subjects: and moreover, he is entirely ignorant of the common rules of arithmetic, and cannot perform, upon paper, a simple sum in multiplication or division. But, in the extraction of roots and in mentioning the factors of high numbers it does not appear that any operation *can* take place; since he will give the answer *immediately*, or in a very few *seconds*, where it would require, according to the ordinary method of solution, a very difficult and laborious calculation: and moreover, the knowledge of a *prime* number cannot be obtained by any *known* rule.

"It has been already observed, that it was evident, from some singular facts, that the child operated by certain rules known only to himself. This discovery was made in one or two instances, when he had been closely pressed upon that point. In one case he was asked to tell the *square* of 4395; he at first hesitated, fearful that he should not be able to answer it correctly: but when he applied himself to it he said it was 19,316,025. On being questioned as to the cause of his hesitation, he replied that he did not like to multiply four figures by four figures: but, said he, 'I found 'out another way; I multiplied 293 by 293, and 'then multiplied this product twice by the number 15, which produced the same result.' On another occasion, his highness the Duke of Gloucester asked him the product of 21,734 multiplied by 543: he immediately replied 11,801,562: but, upon some remark being made on the subject, the child said that he had, in his own mind, multiplied 65202 by 181. Now, although in the first instance it must be evident to every mathematician that 4395 is equal to 293×15, (and consequently that $(4395)^2 = (293)^2 \times (15)^2$; and further that in the second case 543 is equal to 181×3, and consequently that $21734 \times (181 \times 3) = (21734 \times 3 \times 181$; yet, it is not less remarkable that this combination should be *immediately* perceived by the child, and we cannot the less admire his ingenuity in thus seizing *instantly* the easiest method of solving the question proposed to him.

"It must be evident, from what has here been stated, that the singular faculty which this child possesses is not *altogether* dependent upon his *memory*. In the *multiplication* of numbers and in the *raising of powers*, he is doubtless considerably assisted by that remarkable quality of the mind: and in this respect he might be considered as bearing some resemblance (if the difference of age did not prevent the justness of the comparison) to the celebrated Jedediah Buxton, and other persons of similar note. But, in the *extraction of the roots* of numbers, and in determining their *factors* (if any), it is clear, to all those who have witnessed the astonishing quickness and accuracy of this child, that the memory has *little or nothing to do* with the process. And in this particular point consists the remarkable *difference* between the present and all former instances of an apparently similar kind.

" It has been recorded as an astonishing effort of memory that the celebrated Euler (who, in the science of analysis, might vie even with Newton himself,) could remember the first six powers of every number under 100. This, probably, must be taken with some restrictions: but, if true to the fullest extent, it is not more astonishing than the efforts of this child; with this additional circumstance in favour of the latter, that he is capable of veryfying, in a very few seconds, every figure which he may have occasion for. It has been further remarked by the biographer of that eminent mathematician, that ‘ he perceived, ‘ almost at a simple glance, the factors of which ‘ his formulæ were composed; the particular ‘ system of factors belonging to the question un- ‘ der consideration: the various artifices by ‘ which that system may be simplified and redu- ‘ ced; and the relation of the several factors to ‘ the conditions of the hypothesis. His expert- ‘ ness in this particular probably resulted, in a ‘ great measure, from the case with which he ‘ performed mathematical investigations *by head*. ‘ He had always accustomed himself to that ex- ‘ ercise; and, having practised it with assiduity, ‘ (even before the loss of sight, which afterwards ‘ rendered it a matter of necessity,) he is an in- ‘ stance to what an astonishing degree it may be ‘ acquired, and how much it improves the intel- ‘ lectual powers. No other discipline is so ef- ‘ fectual in strengthening the faculty of attention: ‘ it gives a facility of apprehension, an accuracy ‘ and steadiness to the conceptions; and (what is ‘ a still more valuable acquisition it habituates ‘ the mind to arrangement in its reasonings and ‘ reflections.’

“ It is not intended to draw a comparison between the humble, though astonishing, efforts of this infant-prodigy and the gigantic powers of that illustrious character to whom a reference has just been made: yet we may be permitted to *hope* and *expect* that those wonderful talents, which are so conspicuous at this early age, may by a suitable education be considerably *improved* and *extended:* and that some *new* light will eventually be thrown upon those subjects, for the elucidation of which his mind appears to be peculiarly formed by nature, since he *enters into the world* with all those powers and faculties which are not even attainable by the most eminent *at a more advanced period of life.* Every mathematician must be aware of the important advantages which have sometimes been derived from the most simple and trifling circumstances; the full effect of which has not always been evident at first sight. To mention one singular instance of this kind. The very simple improvement of expressing the powers and roots of quantities by means of *indices,* introduced a new and general *arithmetic of exponents:* and this algorithm of powers led the way to the *invention of logarithms,* by means of which, all arithmetical computations are so much faciliated and abridged. Perhaps this child possesses a knowledge of some *more important* properties connected with this subject; and although he is incapable at present of giving any satisfactory account of the state of his mind, or of communicating to others the knowledge which it is so evident he *does* possess, tion; he, however, found the difficulty insurmountable. His father then asked Mr. H. the first number of the *factor* of three figures, which was named, viz. 7; still he could not accomplish it, then the second figure, 3, was told him; still he failed, but when he was made acquainted with the last figure, 9, to the great astonishment of Mr. H. he immediately called out that the other *factor* was 2347, which is correct.

We regret to find that this interesting youth is again exhibited to the public; the money collected for his education, we suppose, not being found sufficient for the purpose. If his parents intend to appropriate the sum gained by exhibiting him, in aid of the above fund, we heartily wish them success, and cannot, perhaps, do them a more essential service than by inserting the following notice, which appeared in the Chronicle of the 17th Dec. 1812.

"SINGULAR PHENOMENON.

"To be seen at Wigley's Exhibition Rooms, Spring Gardens, a child only eight years of age, who, without any previous knowledge of the common rules of arithmetic, possesses the power of solving arithmetical questions by the intuition of his mind alone. He will instantly tell the